Lingcod Tagging Study Off Southwest Vancouver Island, *M/V Pacific Eagle* - July 14-27, 1982

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LINGCOD TAGGING STUDY OFF SOUTHWEST VANCOUVER ISLAND, M/V PACIFIC EAGLE - JULY 14-27, 1982

by

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ABSTRACT

Cass, A. J., E. Cameron, and I. Barber. 1983. Lingcod tagging study off southwest Vancouver Island, M/V PACIFIC EAGLE - July 14-27, 1982. Can. Data Rep. Fish. Aquat. Sci. 406: iv + 84 p.

Lingcod tagging was conducted on commercial fishing grounds off southwest Vancouver Island. The primary objective of the study was to validate our method of age determination. A total of 7429 lingcod were tagged, of which 6945 were injected with oxytetracycline (25 mg/kg) and 451 were double tagged.

Females accounted for 56% of all tagged lingcod. The mean lengths of tagged male and female lingcod were 70 cm and 78 cm, respectively. The age distribution of lingcod was dominated by a dome-shaped series of adjacent year-classes. Specifically, the 1975-77 year-classes predominated as 5-7 year-olds accounting for 63% of all fish sampled for age. Growth, particularly of female lingcod, was rapid and increased almost linearly throughout all year-classes present. Growth declined slightly after age 7. Females increased an average of 5.3 cm/yr in length and males increased an average of 3.2 cm/yr over the range of age-classes present.

A total of 1442 tag recoveries (19.4%) were reported to December 1982. The rates of injected and uninjected recoveries were similar indicating short-term mortality from the dosage of oxytetracycline used in this experiment was negligible. An examination of the cross-sections of fin-rays from 33 injected recoveries indicated 73% had pronounced oxytetracycline marks; 18% had poor marks and 9% did not have distinguishable marks. Tag losses occurred at both tagging sites; 10% at the primary site and 13% at the secondary site.

Key words: lingcod, tag, age, growth, validate, oxytetracycline

RÉSUMÉ

Cass, A. J., E. Cameron, and I. Barber. 1983. Lingcod tagging study off southwest Vancouver Island, M/V PACIFIC EAGLE - July 14-27, 1982. Can. Data Rep. Fish. Aquat. Sci. 406: iv + 84 p.

Nous avons réalisé l'étiquetage de la morue-lingue des pêcheries commerciales situées au large de la côte sud-ouest de l'île Vancouver. L'étude visait principalement la validation de notre méthode de détermination de l'âge. Au total, 7429 morues-lingues ont été étiquetées, dont 6945 ont été injectées d'oxytétracycline (25 mg/kg) et 451 ont reçu deux étiquettes.

Les femelles composaient 56% du total des poissons étiquetés. La longueur moyenne des femelles et des mâles étiquetés s'élevait respectivement à 78 cm et à 70 cm. La répartition des âges était dominée par une série en forme de dôme des classes d'âge adjacentes. Plus précisément, les classes d'âge de 1975 à 1977 prédominaient: les poissons âgés de 5 à 7 ans composaient 63% de tous les spécimens dont l'âge a été déterminé. La croissance, surtout chez la femelle, était rapide et augmentait presque linéairement dans toutes les classes d'âge présentes. Une légère baisse de la croissance était présente après 7 ans. En moyenne, la longueur augmentait de 5,3 cm/année et de 3,2 cm/année chez les femelles et les mâles respectivement pour toutes les classes d'âge présentes.

Au total, 1442 étiquettes (19,4%) avaient été récupérées en décembre 1982. Les taux de récupération des poissons injectés et non injectés étaient semblables, ce qui porte à croire à une faible mortalité à court terme causée par la dose d'oxytétracycline utilisée au cours de l'expérience. Un examen des coupes transversales de rayons de nageoire de 33 poissons injectés a révélé que 73% possédaient des marques d'oxytétracycline prononcées, 18% montraient des marques atténuées et 9% n'avaient pas de marques perceptibles. Les pertes d'étiquettes ont eu lieu aux deux sites d'étiquetage: 10% au premier et 13% au second.

Mots-clés: morue-lingue, étiquette, âge, croissance, validation, oxytétracycline

INTRODUCTION

The primary purpose of the July 1982 lingcod tagging study was to validate our methods of lingcod age determination.

In 1978, lingcod were tagged and released in southern British Columbia waters to examine distribution and growth (Cass et al. 1983). As part of that study a portion of tagged lingcod were injected with oxytetracycline (OTC) to validate our methods of age determination. Results indicated the fin-ray method to age lingcod (Beamish and Chilton 1977) was valid for the sample of lingcod examined (Cass and Beamish 1983). However, we recognized that the sample size of injected recoveries was too small to validate our techniques over a wide range of ages.

The present study was designed to increase our sample size of OTC injected recoveries by tagging and injecting large concentrations of lingcod in the main areas exploited by fisheries off Canada's west coast. Final results of this study are not anticipated until after a 3-5 yr period.

This report describes our tagging methods and results based on recoveries to December 31, 1982.

METHODS

SET INFORMATION

The M/V PACIFIC EAGLE, a 26 m commercial stern trawler, was chartered during July 14-27, 1982 to conduct tagging operations off southwest Vancouver Island.

Tag releases were concentrated at the east (SW corner) and, particularly, the southeast region of La Pérouse Bank (Big Bank) (Fig. 1) These areas have historically been the most productive trawling grounds for lingcod and were considered to have the greatest potential for providing the large sample sizes of tag releases and subsequent recoveries required for this study.

A total of 65 sets were completed using an Engel highlift bottom trawl equipped with a 2-cm stretched codend liner. Sets averaged 32 min and ranged from 15 to 45 min in duration. Fishing depths ranged from 41 to 91 m and averaged 70 m.

Set information is summarized in Appendix 1.

SAMPLING METHODS

At the completion of each set the codend was retrieved and emptied on deck. All lingcod were immediately transferred by hand into one of three 3000 L holding tanks containing flowing sea water. A small number of lingcod, usually less than 20, were then transferred, using a dip-net, to a 1200 L tank containing fresh seawater and the anaesthetic MS222 (tricaine methane sulfonate).

The behavior of anaesthetized fish was monitored to assess the response to the MS222. Fresh sea water was added to the anaesthetic tank if opercular movement was judged to be excessively reduced. As lingcod became anaesthetized they were selected for tagging.

All lingcod designated for tagging were measured for fork length to the nearest millimeter. The presence of the external papillae in male lingcod was used to identify the sex of all tag releases. Observations on injuries and general condition of each tagged fish were recorded.

Each day, randomly selected samples of 10-40 tagged and injected lingcod from a number of sets were transferred into one of the 3000 L holding tanks to examine recovery rates and to assess short-term mortality arising from tagging related stresses. All other tagged lingcod were released directly into the ocean.

The total catch of 347 lingcod from one set (Set 57) were killed and sampled for age and length by sex.

Tagging methods

Lingcod were tagged using a yellow FLOY FD-68 anchor tag. Each tag was number coded (e.g. B8212345) for identification. The 6.5 cm vinyl label contained the following message: (side 1) Reward Pacific Biological Station/ (side 2) Nanaimo, B.C. Canada B82____. The tag was positioned in the connective tissue matrix just below the base of the dorsal fin. All lingcod were tagged at the base of the anterior portion of the first dorsal fin (primary tag site). A random sample of 6.1% of all tag releases also received a second anchor tag at the base of the posterior portion of the first dorsal fin (secondary tag site) to quantify the rates of tag loss.

Oxytetracycline injections

All tagged lingcod except a small randomly selected control group (6.5%) were given intraperitoneal injections of oxytetracycline (OTC) designed to place a "time-mark" in bone. Injections were applied at a dosage of 25 mg/kg of body weight using standard Liquamycin solutions and a continuous pipetting 10-ml syringe equipped with a 16G, 1.9 cm needle. In the laboratory four tagged lingcod were injected at a dosage of 25 mg/kg of body weight prior to field studies. After four months, sections of the first dorsal fin-rays were viewed under the microscope using ultraviolet light. The OTC marks observed at the 25 mg/kg level were considered suitable for field studies.

In previous lingcod tagging studies, lingcod were injected at a dosage of 100 mg/kg of body weight (Cass et al. 1983). Subsequent recovery rates were low. The high dosage of OTC used was a suspected cause of high mortality in that study. Similarly, differential rates of recovery of injected (100 mg OTC/kg) and uninjected recoveries of tagged sablefish were also attributed to an unnaturally high rate of mortality caused by high dosages of OTC (Beamish et al. 1980, Beamish and McFarlane unpubl. data). Although the most suitable dosage of OTC necessary to produce a visible mark on the ageing structure has not been determined, we believe the lower rate of 25 mg/kg of body weight is more appropriate.

Sampling of tag recaptures

Each tagged and injected recovery was measured for fork length to the nearest millimeter, sampled for sex and maturity and a portion of the second dorsal fin (4th-9th ray) was removed for age determination. The fins were air-dried and stored in darkness.

All relevant tag recapture information, such as the date, depth and location of recapture was recorded.

RESULTS AND DISCUSSION

Dense concentrations of lingcod were encountered at many of the tagging locations. Catch rates averaged 227 lingcod per trawling hour for all areas combined. A total of 7785 lingcod were caught. Of this amount, 7429 were tagged, 6945 were injected with OTC, and 451 were double tagged. Tag release information by set is listed in Appendix Table 2.

A total of 188 tagged and injected lingcod were held in holding tanks for periods of 4-8 hr after tagging. No mortality occurred prior to their release.

Females accounted for 56% of all tag releases and ranged in lengths from 34-116 cm. However, females less than 60 cm accounted for only 5% of the total number released. The average length of all tagged females was 78 cm. Males ranged in length from 35-99 cm. Males less than 60 cm accounted for 9% of the total number released. The average length of all tagged males was 70 cm. Length frequencies by set are listed in Appendix Table 3.

The size distribution of male and female lingcod sampled from Set 57 (Fig. 3) was similar to the size distribution of tagged lingcod from all sets (Fig 2) and was considered representative of the size and age structure of lingcod in the areas fished. Female lingcod ranged from age 3 to age 14. The mean age of females was age 7. Males ranged from age 3 to age 13 and averaged 6 yr. The mean and modal age for combined sexes was age 6 (Fig. 4, Table 1). The age distribution of Set 57 was dominated by a dome-shaped series of

adjacent year-classes as is characteristic of the age distributions of lingcod in other studies (Cass unpubl. data). The 1975-77 year-classes dominated the age distribution of Set 57 as 5-7 year-olds accounting for 63% of all fish sampled.

Growth was examined from the relationship between length and age (Fig. 4, Table 1). Growth of lingcod, particularly females, was rapid and increased almost linearly throughout all ages present. Growth declined slightly after age 7. Females increased an average of 5.3 cm/yr in length over the range of age-classes present and males increased an average 3.2 cm/yr (Table 1). The deviation in mean lengths resulting from disparate growth rates between sexes ranged from 3.4 cm at age 4 to an average of 10.1 cm at ages 7-9. The slower growth rates for male lingcod observed in this study are consistent with results of other studies (Beamish and Chilton 1977, Cass and Beamish 1983, Cass unpubl. data).

A total of 1442 tag recoveries or 19% of all tag releases were reported to December 31, 1982 (Table 2). Of that amount, 75% were recaptured by commercial fishing vessels within 2 wk of their release. Reeves (1966) also reported a high initial rate of recovery (65%) over similar time periods for releases in the same area in June 1960. The rate of recaptures in this study closely paralleled the seasonal trend in commercial trawl landings from off southwest Vancouver Island (Fig. 5). Of the recoveries reported by specific capture site, 97% were recaptured in the area of release. The remaining 3% were recovered at an average distance of 44 km from their respective release sites. A total of 97% of the tags recovered were recaptured by Canadian trawlers. Seven tags were recaptured by salmon trollers and 1 tag was recaptured by a handliner. Three tags were recaptured by U.S. vessels outside the Canadian zone.

As previously mentioned, the most suitable dosage of OTC has not been determined. However, it is clear that the dosage of OTC used in this study does not cause the significant mortalities of higher dosages implicated in other studies (Beamish et al. 1980, Cass et al. 1983, Beamish and McFarlane unpubl. data) and is appropriate for validation studies of lingcod. A total of 19.5% and 18.4% of the injected and uninjected tag releases were recovered, respectively (Table 2). The similarity in the rates of recoveries of injected and uninjected tag releases indicates that mortality resulting from the dosage of OTC administered (25 mg/kg) in this study was negligible within the July-December period. An examination of the cross-sections of fin-rays from 33 injected recoveries using ultraviolet light indicated 24 (73%) had pronounced OTC marks, 6 (18%) had poor OTC marks and 3 (9%) did not have a distinguishable OTC mark. However, it should be noted that because of the small amount of fin-ray growth since tagging, the OTC marks were located in a translucent zone on the edge of the fin-ray section. As a result, poor OTC marks on fin-rays were difficult to distinguish from background light at the edge of the fin-ray. It is not possible to assess the validity of our age determination techniques until after 3-5 yr of tag recoveries.

A total of 91 double tagged lingcod were recovered. Tags were lost from both the primary and secondary tag sites; 10% at the primary site and 13% at the secondary site (Table 2). Although based on a small sample size of recoveries, these data indicate the connective tissue at the primary tag site

provides a more secure anchorage for tags than at the secondary site. It is evident from this study that significant tag losses occur in a relatively short time period. Tag losses in this study exceed the 7% reported for sablefish tag recoveries over a 2-4 yr recovery period (Beamish et al. 1980).

ACKNOWLEDGMENTS

We would like to extend our appreciation to the skipper and crew of the M/V PACIFIC EAGLE. We would also like to thank the fishermen and shore workers who promptly returned the tag recaptures used in this report. Dawn Barnes, Doris Chilton, Kathy Best, and Kim Rinhoffer aided in the preparation of this report.

REFERENCES

Beamish, R. J and D. Chilton. 1977. Age determination of lingcod (Ophiodon elongatus) using dorsal fin-rays and scales. J. Fish. Res. Board Can. 34: 1305-1313.

Beamish, R. J., C. Houle, and R. Scarsbrook. 1980. A summary of sablefish tagging and biological studies conducted during 1979 by the Pacific Biological Station. Can. MS Rep. Fish. Aquat. Sci. 1588: 194 p.

Cass, A. J. and R. J. Beamish. 1983. First evidence of validity of the fin-ray method of age determination for marine fishes. N.A.J.F. Mgmt. 3: 182-188.

Cass, A. J., M. S. Smith, and I. Barber. 1983. Lingcod tagging studies conducted in southern British Columbia waters at the Pacific Biological Station during 1978. Can. MS Rep. Fish. Aquat. Sci. (in preparation).

Reeves, J. E. 1966. An estimate of survival, mortality, and of the number of lingcod (Ophiodon elongatus) off the southwest coast of Vancouver Island, British Columbia. Wash. Dept. Fish., Fish. Res. Paper 2, Olympia, Wash., U.S.A.

Table 1. Age distribution and mean length at age of lingcod sampled from Set 57, Big Bank, M/V PACIFIC EAGLE, July 14-27 1982.

Age	Male			Female			Total		
	No. of fish	Mean length (cm)	SE[a]	No. of fish	Mean length (cm)	SE	No. of fish	Mean length (cm)	SE
3	3	61.0	4.04	1	57.0	0.00	4	60.0	3.03
4	19	64.2	0.84	23	67.6	1.12	42	66.0	0.76
5	37	67.1	0.75	35	72.7	1.25	72	69.8	0.79
6	25	71.3	0.93	55	78.2	0.89	80	76.0	0.76
7	18	77.4	1.11	46	85.2	0.82	64	83.0	0.80
8	9	77.4	1.99	35	87.9	0.84	44	85.8	1.01
9	5	81.0	1.41	10	90.3	2.03	15	87.2	1.83
10	2	84.0	3.00	8	94.4	1.77	10	92.3	2.02
11	1	84.0	0.00	6	91.0	3.57	7	90.0	3.18
12	0	-	-	5	101.6	1.72	5	101.6	1.72
13	1	75.0	0.00	0	-	-	1	75.0	0.00
14	0	-	-	1	111.0	0.00	1	111.0	0.00
Total	120			225			345		

[a]SE = Standard error.

Table 2. Summary of lingcod tag releases off southwest Vancouver Island during July 14-28, 1982 and recoveries to December 31, 1982.

	No.	%
Total releases	7429	-
Injected (OTC) releases	6945	93.5
Uninjected releases	484	6.5
Double tag releases	451	6.1
Total recoveries	1442	19.4
Injected recoveries	1353	19.5
Uninjected recoveries	89	18.4
Recapture of double tag releases	91	15.5
1° tag losses	9	9.9
2° tag losses	12	13.2
Probability of 1° + 2° tag losses	-	1.3

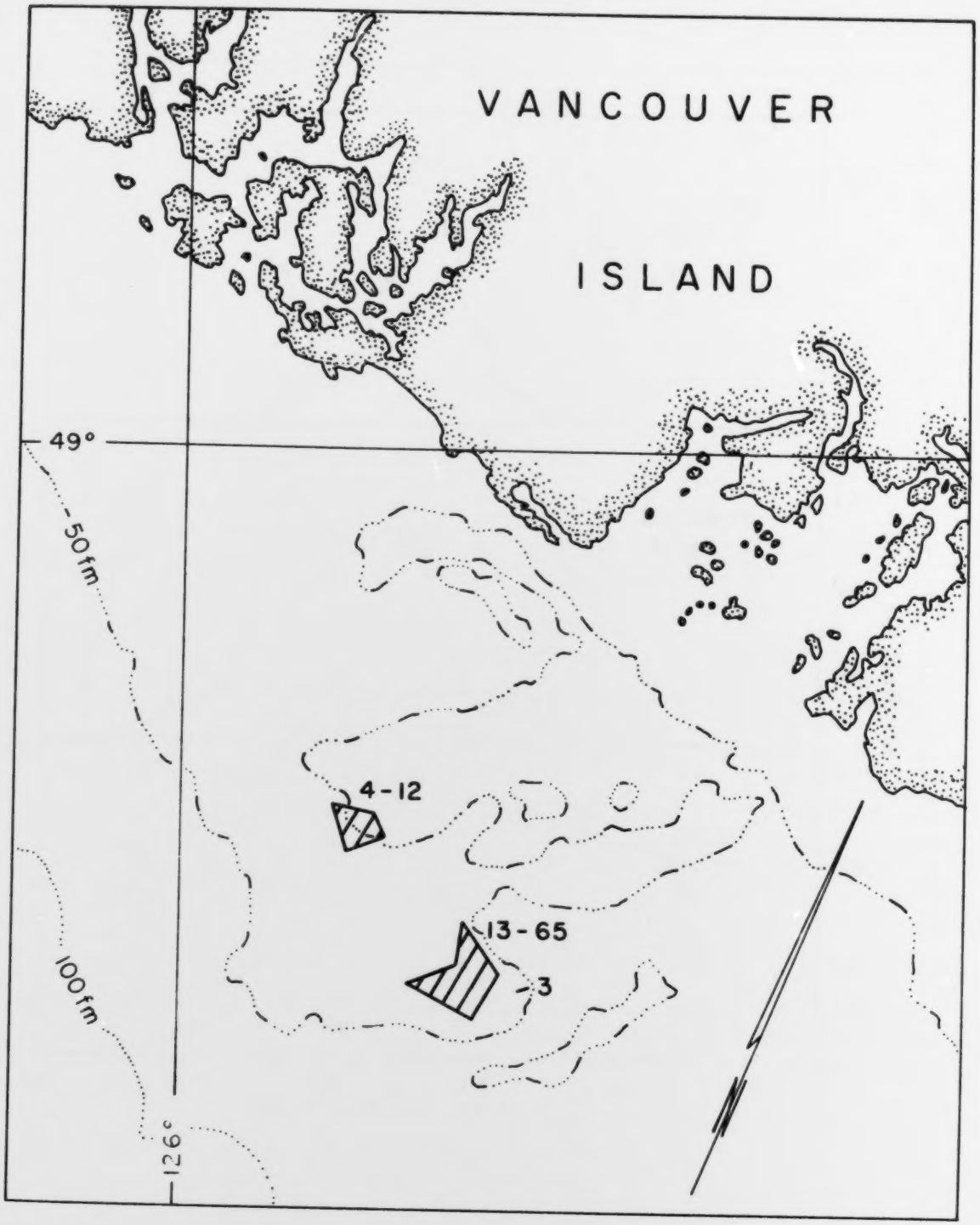

Fig. 1. Set locations during lingcod tagging studies off southwest Vancouver Island, M/V PACIFIC EAGLE, July 14-27, 1982.

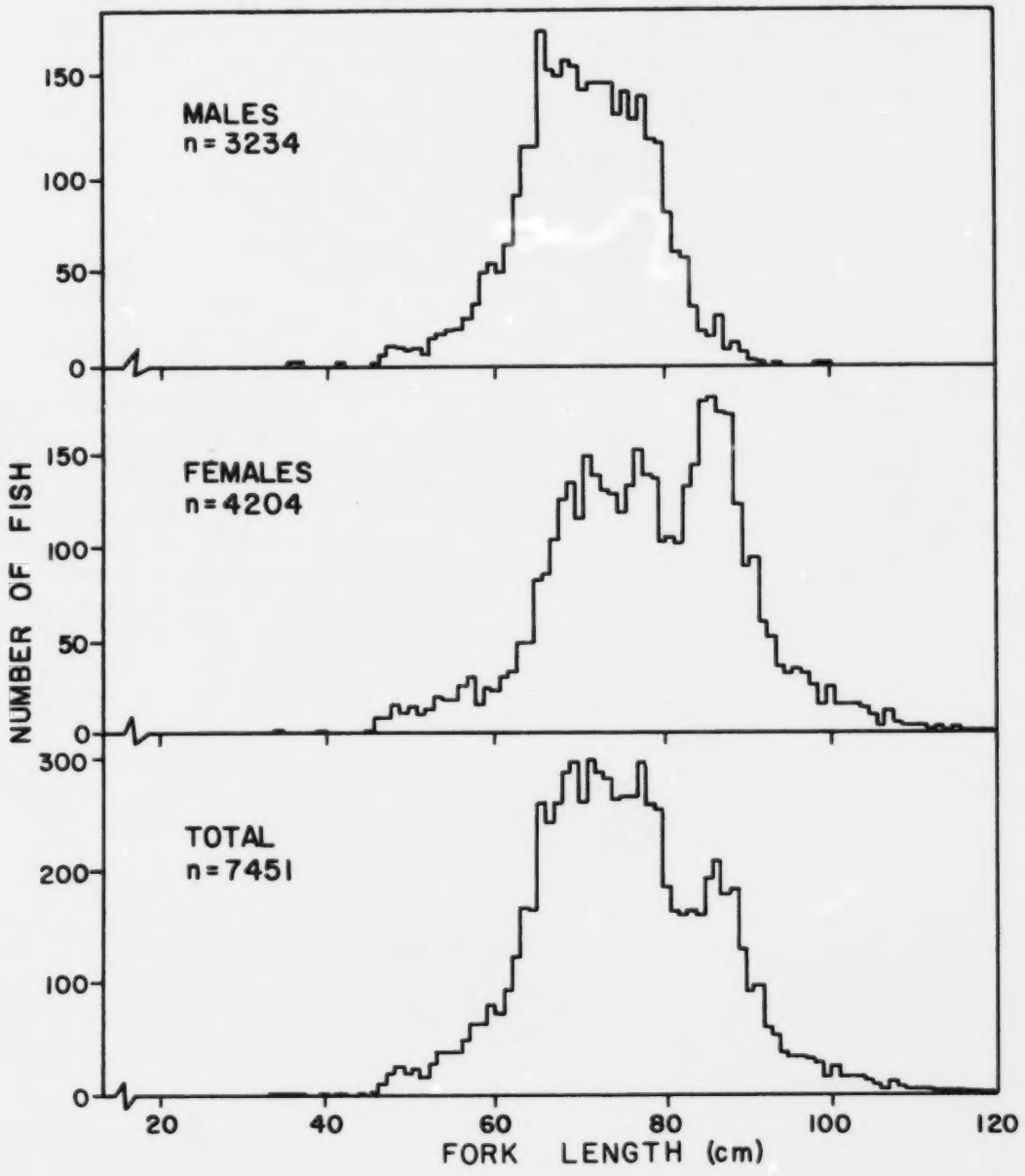

Fig. 2. Length-frequency distribution of tagged lingcod released off southwest Vancouver Island, M/V PACIFIC EAGLE, July 14-27, 1982.

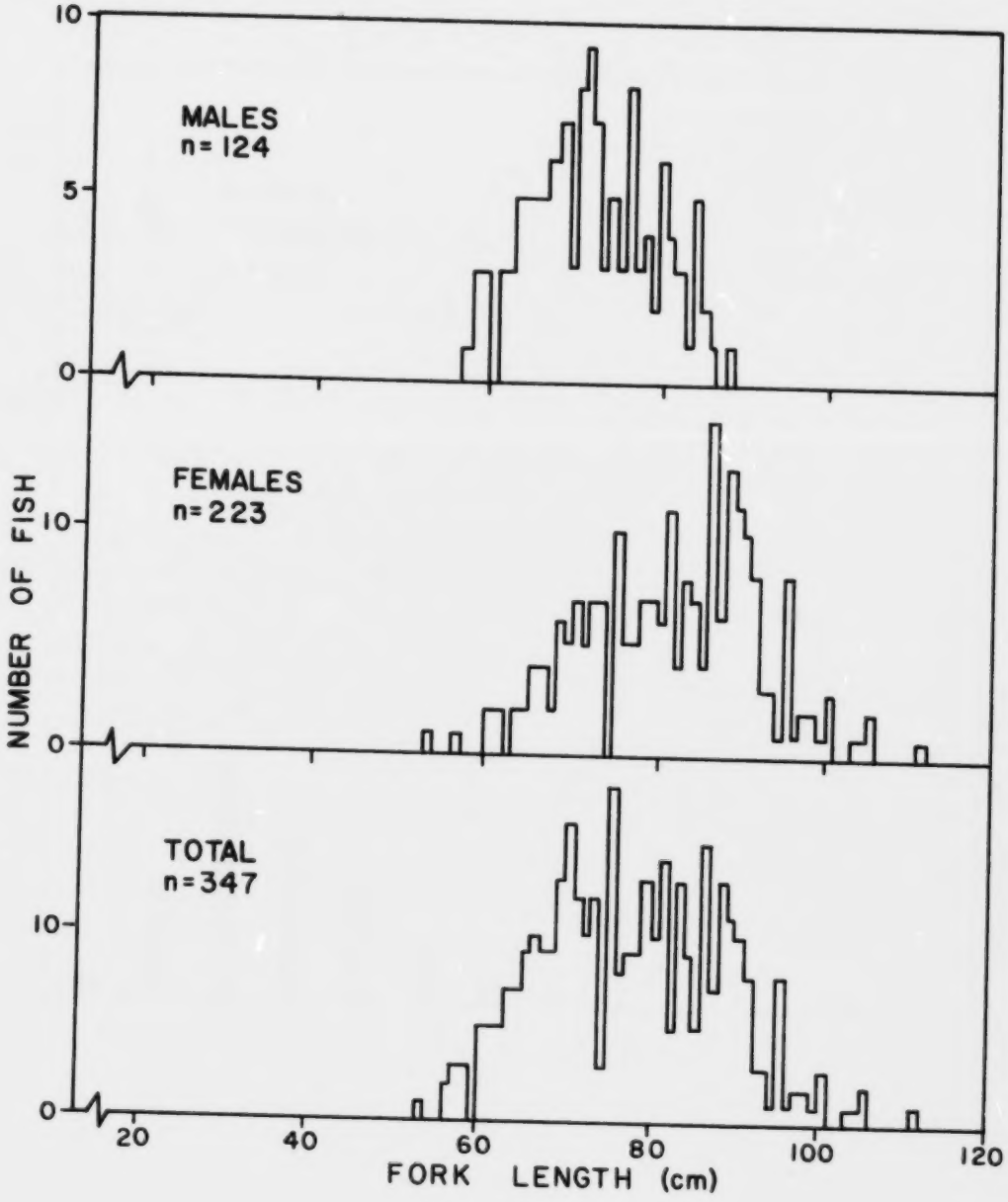

Fig. 3. Length-frequency distribution of lingcod from Set 57, M/V PACIFIC EAGLE, July 14-27, 1982.

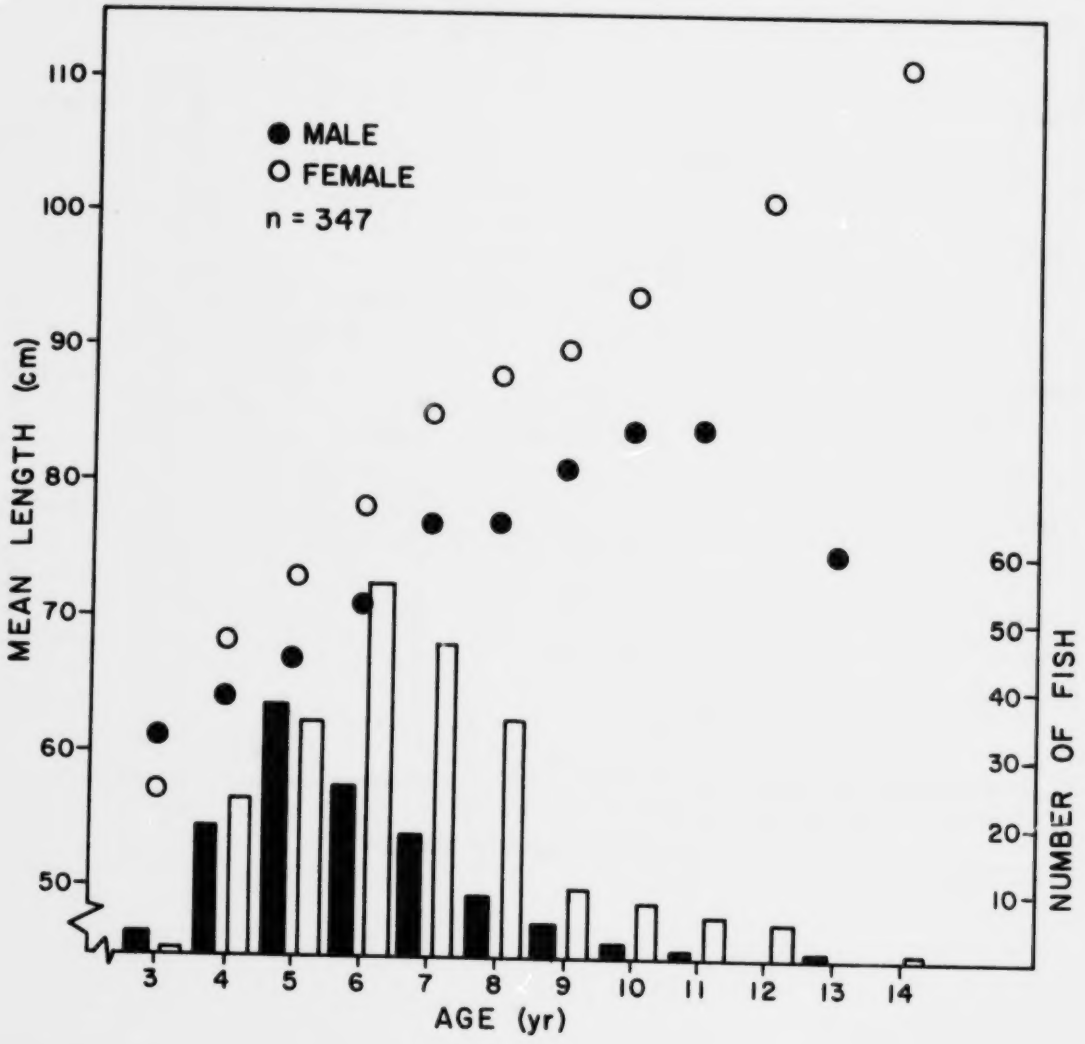

Fig. 4. Age distribution and growth of male and female lingcod, Big Bank (Set 57), M/V PACIFIC EAGLE, July 14-27, 1982.

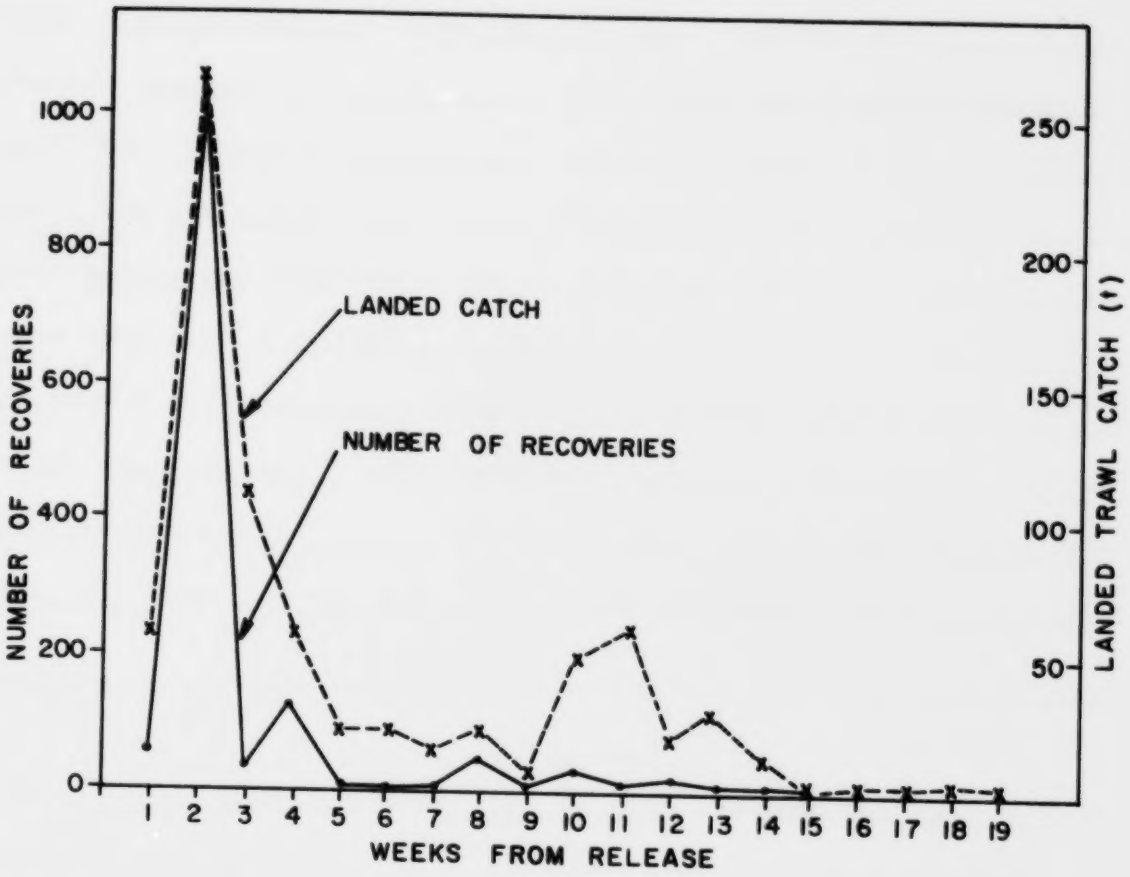

Fig. 5. Weekly trend in recoveries of tagged lingcod and commercial trawl landings from off the southwest coast of Vancouver Island following tag releases during July 14-27, 1982 at La Pérouse Bank off southwest Vancouver Island.

Appendix table 1. Set information, M/V PACIFIC EAGLE, July 14-27 1982.

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 16 SET/HAUL NO. 1

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.4'N Long. 125°40.9'W

END: Lat. 48°34.0'N Long. 125°39.8'W

GEAR: Engel trawl START TIME (PDT) : 0700 DURATION (min): 15

BOTTOM DEPTH (m): Start: 71 End: 68 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: mod-swell TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 16 SET/HAUL NO. 2

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.2'N Long. 125°37.4'W

END: Lat. 48°34.9'W Long. 125°38.5'W

GEAR: Engel trawl START TIME (PDT) : 0900 DURATION (min): 25

BOTTOM DEPTH (m): Start: 66 End: 62 Est. av. Depth: 64

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: mod-swell TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 16 SET/HAUL NO. 3

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.0'N Long. 125°34.0'W

END: Lat. 48°32.7'N Long. 125°34.2'W

GEAR: Engel trawl START TIME (PDT) : 1030 DURATION (min): 10

BOTTOM DEPTH (m): Start: 84 End: 84 Est. av. Depth: 84

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 16 SET/HAUL NO. 4

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°40.5'N Long. 125°46.1'W

END: Lat. 48°41.5'N Long. 125°47.5'W

GEAR: Engel trawl START TIME (PDT) : 1223 DURATION (min): 20

BOTTOM DEPTH (m): Start: 66 End: 70 Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 16 SET/HAUL NO. 5

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°41.7'N Long. 125°47.6'W

END: Lat. 48°40.7'N Long. 125°46.5'W

GEAR: Engel trawl START TIME (PDT): 1540 DURATION (min): 20

BOTTOM DEPTH (m): Start: 68 End: 66 Est. av. Depth: 67

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 16 SET/HAUL NO. 6

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°40.4'N Long. 125°45.9'W

END: Lat. 48°41.1'N Long. 125°46.9'W

GEAR: Engel trawl START TIME (PDT): 1820 DURATION (min): 20

BOTTOM DEPTH (m): Start: - End: - Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 16 SET/HAUL NO. 7

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°40.9'N Long. 125°46.7'W

END: Lat. 48°41.4'N Long. 125°48.0'W

GEAR: Engel trawl START TIME (PDT) : 1913 DURATION (min): 20

BOTTOM DEPTH (m): Start: 70 End: 68 Est. av. Depth: 69

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 8

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°42.2'N Long. 125°48.3'W

END: Lat. 48°41.5'N Long. 125°47.1'W

GEAR: Engel trawl START TIME (PDT) : 0745 DURATION (min): 20

BOTTOM DEPTH (m): Start: 73 End: - Est. av. Depth: 73

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 9

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°41.0'N Long. 125°46.9'W

END: Lat. 48°42.2'N Long. 125°47.6'W

GEAR: Engel trawl START TIME (PDT): 0840 DURATION (min): 20

BOTTOM DEPTH (m): Start: 68 End: 64 Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 10

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°40.9'N Long. 125°46.4'W

END: Lat. 48°41.4'N Long. 125°47.1'W

GEAR: Engel trawl START TIME (PDT): 0940 DURATION (min): 15

BOTTOM DEPTH (m): Start: 91 End: 86 Est. av. Depth: 89

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 11

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°41.3'N Long. 125°47.3'W

END: Lat. 48°41.7'N Long. 125°48.1'W

GEAR: Engel trawl START TIME (PDT) : 1115 DURATION (min): 20

BOTTOM DEPTH (m): Start: 68 End: 66 Est. av. Depth: 67

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 12

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°41.8'N Long. 125°47.9'W

END: Lat. 48°41.0'N Long. 125°46.9'W

GEAR: Engel trawl START TIME (PDT) : 1300 DURATION (min): 20

BOTTOM DEPTH (m): Start: 70 End: 66 Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 11

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°41.3'N Long. 125°47.3'W

END: Lat. 48°41.7'N Long. 125°48.1'W

GEAR: Engel trawl START TIME (PDT) : 1115 DURATION (min): 20

BOTTOM DEPTH (m): Start: 68 End: 66 Est. av. Depth: 67

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 12

LOCATION: Steep edge-SW corner AREA: West coast Vancouver Island

START: Lat. 48°41.8'N Long. 125°47.9'W

END: Lat. 48°41.0'N Long. 125°46.9'W

GEAR: Engel trawl START TIME (PDT) :1300 DURATION (min): 20

BOTTOM DEPTH (m): Start: 70 End: 66 Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 13

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.2'N Long. 125°38.8'W

END: Lat. 48°32.2'N Long. 125°37.8'W

GEAR: Engel trawl START TIME (PDT) : 1455 DURATION (min): 20

BOTTOM DEPTH (m): Start: 70 End: 79 Est. av. Depth: 75

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 17 SET/HAUL NO. 14

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.3'N Long. 125°38.4'W

END: Lat. 48°33.3'N Long. 125°38.4'W

GEAR: Engel trawl START TIME (PDT) : 1535 DURATION (min): 28

BOTTOM DEPTH (m): Start: 70 End: 66 Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 17 SET/HAUL NO. 15

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°38.6'W

END: Lat. 48°34.5'N Long. 125°37.3'W

GEAR: Engel trawl START TIME (PDT) : 1635 DURATION (min): 30

BOTTOM DEPTH (m): Start: 66 End: 64 Est. av. Depth: 65

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 17 SET/HAUL NO. 16

LOCATION: Big Bank AREA: West Coast Vancouver Island

START: Lat. 48°35.2'N Long. 125°38.5'W

END: Lat. 48°33.2'N Long. 125°36.4'W

GEAR: Engel trawl START TIME (PDT) : 1905 DURATION (min): -

BOTTOM DEPTH (m): Start: 64 End: 68 Est. av. Depth: 67

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 18 SET/HAUL NO. 17

LOCATION: Big Bank AREA: West Coast Vancouver Island

START: Lat. 48°35.0'N Long. 125°37.6'W

END: Lat. 48°34.3'N Long. 125°36.9'W

GEAR: Engel trawl START TIME (PDT) :0940 DURATION (min): 15

BOTTOM DEPTH (m): Start: 66 End: 68 Est. av. Depth: 67

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: heavy chop TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 18 SET/HAUL NO. 18

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.2'N Long. 125°37.8'W

END: Lat. 48°35.2'N Long. 125°38.0'W

GEAR: Engel trawl START TIME (PDT) : 1020 DURATION (min): 30

BOTTOM DEPTH (m): Start: 68 End: 64 Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 18 SET/HAUL NO. 19

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°35.3'N Long. 125°37.7'W

END: Lat. 48°33.6'N Long. 125°39.0'W

GEAR: Engel trawl START TIME (PDT) : 1130 DURATION (min): -

BOTTOM DEPTH (m): Start: 70 End: 68 Est. av. Depth: 69

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 18 SET/HAUL NO. 20

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.6'N Long. 125°38.9'W

END: Lat. 48°31.7'N Long. 125°38.2'W

GEAR: Engel trawl START TIME (PDT) : 1240 DURATION (min): 30

BOTTOM DEPTH (m): Start: 71 End: 79 Est. av. Depth: 75

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 18 SET/HAUL NO. 21

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°32.3'N Long. 125°38.8'W

END: Lat. 48°32.8'N Long. 125°41.8'W

GEAR: Engel trawl START TIME (PDT): 1355 DURATION (min): -

BOTTOM DEPTH (m): Start: 81 End: 79 Est. av. Depth: 80

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 18 SET/HAUL NO. 22

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.0'N Long. 125°41.6'W

END: Lat. 48°33.1'N Long. 125°41.5'W

GEAR: Engel trawl START TIME (PDT): 1520 DURATION (min): 45

BOTTOM DEPTH (m): Start: 77 End: 75 Est. av. Depth: 76

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 18 SET/HAUL NO. 23

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.2'N Long. 125°40.7'W

END: Lat. 48°33.3'N Long. 125°40.3'W

GEAR: Engel trawl START TIME (PDT) : 1645 DURATION (min): 50

BOTTOM DEPTH (m): Start: 73 End: 71 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 18 SET/HAUL NO. 24

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°32.8'N Long. 125°40.4'W

END: Lat. 48°34.3'N Long. 125°37.7'W

GEAR: Engel trawl START TIME (PDT) : 1805 DURATION (min): 45

BOTTOM DEPTH (m): Start: 75 End: - Est. av. Depth: 75

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 19 SET/HAUL NO. 25

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°35.2'N Long. 125°38.6'W

END: Lat. 48°33.9'N Long. 125°39.1'W

GEAR: Engel trawl START TIME (PDT) : 0925 DURATION (min): -

BOTTOM DEPTH (m): Start: 66 End: - Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: Mod. swell TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 19 SET/HAUL NO. 26

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.9'N Long. 125°39.1'W

END: Lat. 48°33.0'N Long. 125°41.4'W

GEAR: Engel trawl START TIME (PDT) : 1020 DURATION (min): 40

BOTTOM DEPTH (m): Start: 68 End: 79 Est. av. Depth: 74

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 19 SET/HAUL NO. 27

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.3'N Long. 125°41.7'W

END: Lat. 48°34.3'N Long. 125°37.4'W

GEAR: Engel trawl START TIME (PDT) :1130 DURATION (min): 45

BOTTOM DEPTH (m): Start: 79 End: 64 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 19 SET/HAUL NO. 28

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.6'N Long. 125°40.2'W

END: Lat. 48°34.0'N Long. 125°38.8'W

GEAR: Engel trawl START TIME (PDT) : 1615 DURATION (min): 25

BOTTOM DEPTH (m): Start: 71 End: 66 Est. av. Depth: 69

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 19 SET/HAUL NO. 29

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.9'N Long. 125°38.0'W

END: Lat. 48°33.4'N Long. 125°40.2'W

GEAR: Engel trawl START TIME (PDT) : 1825 DURATION (min): 30

BOTTOM DEPTH (m): Start: 66 End: 71 Est. av. Depth: 69

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 20 SET/HAUL NO. 30

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°38.5'W

END: Lat. 48°33.5'N Long. 125°39.9'W

GEAR: Engel trawl START TIME (PDT) : 0815 DURATION (min): 25

BOTTOM DEPTH (m): Start: 70 End: 70 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 20 SET/HAUL NO. 31

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.6'N Long. 125°39.9'W

END: Lat. 48°33.6'N Long. 125°38.0'W

GEAR: Engel trawl START TIME (PDT) : 1120 DURATION (min): 20

BOTTOM DEPTH (m): Start: - End: - Est. av. Depth: -

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 20 SET/HAUL NO. 32

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°40.3'W

END: Lat. 48°33.7'N Long. 125°37.8'W

GEAR: Engel trawl START TIME (PDT) : 1230 DURATION (min): 30

BOTTOM DEPTH (m): Start: 73 End: 70 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 20 SET/HAUL NO. 33

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.8'N Long. 125°37.2'W

END: Lat. 48°32.8'N Long. 125°39.9'W

GEAR: Engel trawl START TIME (PDT) : 1430 DURATION (min): 40

BOTTOM DEPTH (m): Start: 66 End: 73 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 20 SET/HAUL NO. 34

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°32.8'N Long. 125°37.8'W

END: Lat. 48°33.0'N Long. 125°39.1'W

GEAR: Engel trawl START TIME (PDT) : 1715 DURATION (min): 25

BOTTOM DEPTH (m): Start: 77 End: 73 Est. av. Depth: 75

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 21 SET/HAUL NO. 35

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.6'N Long. 125°37.7'W

END: Lat. 48°33.8'N Long. 125°39.3'W

GEAR: Engel trawl START TIME (PDT) : 0840 DURATION (min): 30

BOTTOM DEPTH (m): Start: 66 End: 70 Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 21 SET/HAUL NO. 36

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.4'N Long. 125°40.1'W

END: Lat. 48°33.9'N Long. 125°37.7'W

GEAR: Engel trawl START TIME (PDT) : 1030 DURATION (min): 40

BOTTOM DEPTH (m): Start: 71 End: 71 Est. av. Depth: 71

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 21 SET/HAUL NO. 37

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.2'N Long. 125°37.4'W

END: Lat. 48°33.3'N Long. 125°41.3'W

GEAR: Engel trawl START TIME (PDT) : 1230 DURATION (min): 45

BOTTOM DEPTH (m): Start: 66 End: 73 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 21 SET/HAUL NO. 38

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.3'N Long. 125°36.9'W

END: Lat. 48°34.8'N Long. 125°38.7'W

GEAR: Engel trawl START TIME (PDT) : 1455 DURATION (min): 40

BOTTOM DEPTH (m): Start: 71 End: 64 Est. av. Depth: 68

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 21 SET/HAUL NO. 39

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.4'N Long. 125°37.1'W

END: Lat. 48°33.1'N Long. 125°41.2'W

GEAR: Engel trawl START TIME (PDT) : 1610 DURATION (min): 45

BOTTOM DEPTH (m): Start: _____ End: _____ Est. av. Depth: _____

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 22 SET/HAUL NO. 40

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°40.4'W

END: Lat. 48°34.1'N Long. 125°38.3'W

GEAR: Engel trawl START TIME (PDT) : 0810 DURATION (min): 35

BOTTOM DEPTH (m): Start: 68 End: 64 Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 22 SET/HAUL NO. 41

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.0'N Long. 125°38.1'W

END: Lat. 48°32.8'N Long. 125°39.7'W

GEAR: Engel trawl START TIME (PDT): 0930 DURATION (min): 40

BOTTOM DEPTH (m): Start: 64 End: 73 Est. av. Depth: 69

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 22 SET/HAUL NO. 42

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.2'N Long. 125°41.0'W

END: Lat. 48°33.8'N Long. 125°38.8'W

GEAR: Engel trawl START TIME (PDT): 1350 DURATION (min): 30

BOTTOM DEPTH (m): Start: 75 End: 66 Est. av. Depth: 71

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 22 SET/HAUL NO. 43

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°38.7'W

END: Lat. 48°33.1'N Long. 125°41.2'W

GEAR: Engel trawl START TIME (PDT): 1555 DURATION (min): 30

BOTTOM DEPTH (m): Start: 71 End: 75 Est. av. Depth: 73

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 23 SET/HAUL NO. 44

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°40.9'W

END: Lat. 48°33.7'N Long. 125°39.1'W

GEAR: Engel trawl START TIME (PDT): 0950 DURATION (min): 25

BOTTOM DEPTH (m): Start: 73 End: 68 Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 23 SET/HAUL NO. 45

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.4'N Long. 125°41.1'W

END: Lat. 48°33.8'N Long. 125°38.6'W

GEAR: Engel trawl START TIME (PDT) : 1155 DURATION (min): -

BOTTOM DEPTH (m): Start: 73 End: 68 Est. av. Depth: 71

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 23 SET/HAUL NO. 46

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.6'N Long. 125°39.0'W

END: Lat. 48°33.2'N Long. 125°41.4'W

GEAR: Engel trawl START TIME (PDT) : 1400 DURATION (min): 30

BOTTOM DEPTH (m): Start: 70 End: 75 Est. av. Depth: 73

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 23 SET/HAUL NO. 47

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.4'N Long. 125°40.8'W

END: Lat. 48°33.1'N Long. 125°38.3'W

GEAR: Engel trawl START TIME (PDT) : 1540 DURATION (min): 30

BOTTOM DEPTH (m): Start: 70 End: 73 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 24 SET/HAUL NO. 48

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.0'N Long. 125°38.6'W

END: Lat. 48°33.1'N Long. 125°41.1'W

GEAR: Engel trawl START TIME (PDT) : 0810 DURATION (min): 40

BOTTOM DEPTH (m): Start: 66 End: 73 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 24 SET/HAUL NO. 49

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.3'N Long. 125°40.9'W

END: Lat. 48°33.8'N Long. 125°38.0'W

GEAR: Engel trawl START TIME (PDT) : 0930 DURATION (min): 40

BOTTOM DEPTH (m): Start: 73 End: 70 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 24 SET/HAUL NO. 50

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.3'N Long. 125°41.2'W

END: Lat. 48°34.7'N Long. 125°38.6'W

GEAR: Engel trawl START TIME (PDT) : 1140 DURATION (min): 45

BOTTOM DEPTH (m): Start: 73 End: 62 Est. av. Depth: 78

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 24 SET/HAUL NO. 51

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.1'N Long. 125°39.1'W

END: Lat. 48°33.1'N Long. 125°39.9'W

GEAR: Engel trawl START TIME (PDT): 1440 DURATION (min): 45

BOTTOM DEPTH (m): Start: 62 End: 75 Est. av. Depth: 69

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 24 SET/HAUL NO. 52

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.2'N Long. 125°41.5'W

END: Lat. 48°32.5'N Long. 125°39.4'W

GEAR: Engel trawl START TIME (PDT): 1755 DURATION (min): 40

BOTTOM DEPTH (m): Start: 73 End: 73 Est. av. Depth: 73

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 25 SET/HAUL NO. 53

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.3'N Long. 125°41.0'W

END: Lat. 48°33.2'N Long. 125°38.3'W

GEAR: Engel trawl START TIME (PDT) : 0740 DURATION (min): 40

BOTTOM DEPTH (m): Start: 73 End: 71 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 25 SET/HAUL NO. 54

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.1'N Long. 125°38.7'W

END: Lat. 48°33.2'N Long. 125°41.7'W

GEAR: Engel trawl START TIME (PDT) : 1005 DURATION (min): 40

BOTTOM DEPTH (m): Start: 73 End: 77 Est. av. Depth: 75

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 25 SET/HAUL NO. 55

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°32.9'N Long. 125°38.6'W

END: Lat. 48°33.2'N Long. 125°41.2'W

GEAR: Engel trawl START TIME (PDT): 1315 DURATION (min): 40

BOTTOM DEPTH (m): Start: 75 End: 75 Est. av. Depth: 75

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 25 SET/HAUL NO. 56

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.5'N Long. 125°39.4'W

END: Lat. 48°33.2'N Long. 125°36.2'W

GEAR: Engel trawl START TIME (PDT): 1455 DURATION (min): 40

BOTTOM DEPTH (m): Start: 71 End: 71 Est. av. Depth: 71

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 26 SET/HAUL NO. 57

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.0'N Long. 125°38.3'W

END: Lat. 48°33.4'N Long. 125°41.2'W

GEAR: Engel trawl START TIME (PDT): 0810 DURATION (min): 40

BOTTOM DEPTH (m): Start: 68 End: 73 Est. av. Depth: 71

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 26 SET/HAUL NO. 58

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°32.9'N Long. 125°40.2'W

END: Lat. 48°33.5'N Long. 125°39.9'W

GEAR: Engel trawl START TIME (PDT): 1305 DURATION (min): 30

BOTTOM DEPTH (m): Start: 73 End: 70 Est. av. Depth: 72

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 26 SET/HAUL NO. 59

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.7'N Long. 125°39.6'W

END: Lat. 48°31.6'N Long. 125°38.4'W

GEAR: Engel trawl START TIME (PDT) : 1400 DURATION (min): 30

BOTTOM DEPTH (m): Start: 70 End: 62 Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 26 SET/HAUL NO. 60

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.1'N Long. 125°38.0'W

END: Lat. 48°33.2'N Long. 125°37.8'W

GEAR: Engel trawl START TIME (PDT) : 1530 DURATION (min): 30

BOTTOM DEPTH (m): Start: 66 End: 73 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 26 SET/HAUL NO. 61

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.3'N Long. 125°38.6'W

END: Lat. 48°33.8'N Long. 125°38.8'W

GEAR: Engel trawl START TIME (PDT) : 1800 DURATION (min): 30

BOTTOM DEPTH (m): Start: 75 End: 71 Est. av. Depth: 73

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 27 SET/HAUL NO. 62

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.8'N Long. 125°38.6'W

END: Lat. 48°33.2'N Long. 125°41.4'W

GEAR: Engel trawl START TIME (PDT) : 0825 DURATION (min): 30

BOTTOM DEPTH (m): Start: - End: - Est. av. Depth: -

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 27 SET/HAUL NO. 63

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°33.1'N Long. 125°41.5'W

END: Lat. 48°33.7'N Long. 125°39.3'W

GEAR: Engel trawl START TIME (PDT) : 1040 DURATION (min): 30

BOTTOM DEPTH (m): Start: 77 End: 70 Est. av. Depth: 74

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

VESSEL: PACIFIC EAGLE DATE: Yr 82 Mo. 7 Day 27 SET/HAUL NO. 64

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.0'N Long. 125°38.4'W

END: Lat. 48°34.2'N Long. 125°38.1'W

GEAR: Engel trawl START TIME (PDT) : 1300 DURATION (min): 40

BOTTOM DEPTH (m): Start: 66 End: - Est. av. Depth: 66

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 1 (cont'd)

Yr Mo. Day

VESSEL: PACIFIC EAGLE DATE: 82 7 27 SET/HAUL NO. 65

LOCATION: Big Bank AREA: West coast Vancouver Island

START: Lat. 48°34.2'N Long. 125°38.8'W

END: Lat. 48°33.1'N Long. 125°38.1'W

GEAR: Engel trawl START TIME (PDT) : 1505 DURATION (min): 45

BOTTOM DEPTH (m): Start: 64 End: 75 Est. av. Depth: 70

DIRECTION OF SET °true: - SPEED kn: - DISTANCE TRAVELLED mi. -

SET ON: Pre-selected WATER CONDITION: - TIDE: -

WIND DIRECTION: - WIND SPEED: - RECORDER: A. C.

TTM: - TDM: - BT: - OTHER OCEANOGRAPHIC DATA: -

Appendix table 2. Numbers and identification of tagged lingcod released at different locations off the southwest coast of Vancouver Island, PACIFIC EAGLE, July 14-27, 1982.

Release date	Set no.	Location	Primary tags		Secondary tags			Cumulative totals		
			Identification no. B82-	No. released	Identification no. B82-	No. released	No. injected	1° tags	2° tags	1°+2° tags
July 16	1	Big Bank	23482-23491	10	-	-	10	10		
	4	S.W. Corner	23492-23656	149	23519-23647	6	142	159		6
	5	"	23657-23763	102	23683-23751	6	92	261		12
	6	"	23764-23898	125	23791-23889	8	116	386		20
	7	"	23899-23999	80	23926-23994	4	74	466		24
July 17	8	"	24400-24454	52	24437-24439	2	42	518		26
	9	"	24455-24483	27	23482-23484	2	27	545		28
	13	Big Bank	24000-24020							
			24485-24499	34	24012-24014	2	32	579		30
	14	"	24021-24057	34	24048-24050	2	33	613		32
	15	"	24058-24155	92	24085-24151	6	86	705		38
	16	"	24156-24349	182	24183-24345	12	170	887		50
	17	"	24350-24356	7		-	7	894		50
	18	"	24357-24382	24	24377-24379	2	22	918		52
	19	"	24383-24399							
			24500-24518	34	24510-24512	2	32	952		54
July 18	20	"	24519-24598	71	24546-24580	4	67	1023		58
	21	"	24599-24698	94	24626-24685	6	88	1117		64
	22	"	24699-24803	97	24726-24792	6	91	1214		70
	23	"	24804-24873	63	24831-24865	4	59	1277		74
	24	"	24874-25015	132	24901-24999	8	124	1409		82
July 19	25	"	25016-25033	18	-	-	18	1427		82
	26	"	25034-25172	128	25093-25159	8	120	1555		90
	27	"	25173-25409	221	25200-25394	14	208	1776		104
	28	"	25410-25554	136	25436-25534	8	129	1912	1	111

Appendix table 2 (cont'd)

Release date	Set no.	Location	Primary tags: Identification no. B82-	Primary tags: No. released	Secondary tags: Identification no. B82-	Secondary tags: No. released	No. injected	Cumulative totals: 1° tags	Cumulative totals: 2° tags	Cumulative totals: 1°+2° tags
July 19	29	Big Bank	25555-25814	241	25582-25809	16	225	2153	1	127
July 20	30	"	25815-26061	230	25842-26036	14	216	2383	1	141
	31	"	26062-26159	91	26089-26156	6	85	2474	1	147
	32	"	26160-26289	122	26187-26285	8	114	2596	1	155
	33	"	26290-26464	164	26317-26447	10	154	2760	1	165
	34	"	26465-26543	75	26492-26526	4	71	2835	1	169
July 21	35	"	26544-26661	110	26571-26637	6	104	2945	1	175
	36	"	26662-26807	138	26689-26787	8	130	3083	1	183
	37	"	26808-26972	154	26835-26965	10	144	3237	1	193
	38	"	26973-27077	98	27000-27071	6	92	3335	1	199
	39	"	27078-27214	127	27106-27205	8	129	3462	1	207
July 22	40	"	27215-27311	89	27242-27308	6	83	3551	1	213
	41	"	27312-27575	244	27339-27569	16	228	3795	1	229
	42	"	27576-27757	171	27603-27734	10	161	3966	1	239
	43	"	27758-27877	114	27785-27851	6	108	4080	1	245
July 23	44	"	27879-28079	185	27905-28068	12	173	4265	1	257
	45	"	28080-28250	161	28107-28237	10	151	4426	1	267
	46	"	28251-28347	91	28278-28344	6	85	4517	1	273
	47	"	28348-28498	142	28375-28473	8	134	4659	1	281
July 24	48	"	28499-28635	128	28526-28624	8	120	4787	1	289
	49	"	28636-28789	146	28663-28761	8	138	4933	1	297
	50	"	28790-28910	115	28817-28883	6	109	5048	1	305
	51	"	28911-29176	249	28938-29164	16	233	5297	1	321
	52	"	29177-29446	253	29204-29431	16	237	5550	1	337
July 25	53	"	29447-29690	231	29474-29667	13	217	5781	1	350
	54	"	29691-29971	263	29718-29944	16	247	6044	1	366
	55	"	29972-30136	155	29999-30129	10	145	6199	1	376
	56	"	30137-30424	270	30164-30422	18	252	6469	1	394

Appendix table 2 (cont'd)

Release date	Set no.	Location	Primary tags		Secondary tags		No. injected	Cumulative totals		
			Identification no. B82-	No. released	Identification no. B82-	No. released		1° tags	2° tags	1°+2° tags
July 26	58	Big Bank	30425-30502	74	30452-30486	4	70	6543	1	398
	59	"	30503-30660	148	30530-30659	10	139	6691	1	408
	60	"	30661-30898	224	30688-30882	14	210	6915	1	422
	61	"	30899-30943	43	30926-30928	2	41	6958	1	424
July 27	62	"	30944-31097	144	30971-31069	8	136	7102	1	432
	63	"	31098-31215	113	31124-31190	6	84	7215	1	438
	64	"	31216-31317	96	31241-31309	6	90	7311	1	444
	65	"	31318-31440	117	31345-31441	7	111	7428	1	451

Appendix table 3. Length frequency of lingcod by set, M/V PACIFIC EAGLE, July 14-27, 1982[a].

Set no.	1			4			5			6		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	1
34	-	-	-	-	-	-	-	1	1	-	-	-
35	-	-	-	-	-	-	-	0	0	2	-	2
36	-	-	-	-	-	-	-	0	1	0	-	0
37	-	-	-	-	-	-	-	0	0	0	-	0
38	-	-	-	-	-	-	-	0	0	0	-	0
39	-	-	-	-	-	-	-	0	0	0	-	0
40	-	-	-	-	-	-	-	0	0	0	-	0
41	-	-	-	-	-	-	-	0	0	0	-	0
42	-	-	-	-	-	-	-	0	0	0	-	0
43	-	-	-	-	-	-	-	0	0	0	-	0
44	-	-	-	-	1	1	-	0	0	1	-	1
45	-	-	-	1	2	3	-	0	0	1	-	1
46	-	-	-	1	1	2	-	0	0	0	1	1
47	-	-	-	4	3	8	-	0	0	0	1	1
48	-	-	-	2	3	5	1	1	2	1	1	2
49	-	-	-	3	2	5	0	1	1	1	2	3
50	-	-	-	1	0	1	1	1	2	0	1	1
51	-	-	-	2	2	4	0	0	0	1	4	5
52	-	-	-	5	2	7	2	0	2	2	4	6
53	-	-	-	3	2	5	3	3	6	3	3	6
54	-	-	-	1	5	6	0	0	0	3	1	4
55	-	-	-	2	3	5	0	0	0	4	3	7
56	-	-	-	2	4	6	1	1	2	2	4	6
57	-	-	-	4	2	7	2	4	6	5	2	7
58	-	-	-	2	2	4	2	0	2	6	2	8
59	-	-	-	6	2	9	1	1	2	3	0	3
60	-	-	-	3	3	6	2	2	4	2	2	4
61	-	-	-	1	3	4	1	0	1	2	3	5
62	-	-	-	1	4	5	5	0	5	3	0	3
63	-	-	-	2	5	7	3	2	5	8	3	11
64	-	-	-	2	2	4	4	3	7	3	1	4
65	-	-	-	6	2	8	1	3	4	4	5	9
66	-	-	-	3	4	7	2	5	7	0	2	2
67	-	-	-	3	3	6	6	2	8	3	1	4
68	-	-	-	2	0	2	1	3	4	0	0	0
69	1	-	1	1	2	3	0	2	2	1	3	4
70	0	-	0	1	5	6	0	1	1	2	2	4
71	0	-	0	1	0	1	0	5	5	0	1	1
72	0	-	0	1	1	2	0	2	2	0	1	1
73	0	-	0	0	2	2	0	1	1	0	1	1
74	0	-	0	0	0	0	0	1	1	0	0	0
75	0	-	0	1	0	1	2	0	2	0	0	0
76	0	-	0	-	1	2	0	0	0	0	1	1

Appendix table 3 (cont'd)

Set no.	1			4			5			6		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	0	-	0	-	0	0	0	0	0	1	0	1
78	0	1	1	-	0	0	0	1	1	-	0	0
79	0	0	0	-	0	0	1	1	2	-	0	0
80	0	0	0	-	0	0	2	0	2	-	0	0
81	0	0	0	-	0	0	0	0	0	-	0	0
82	1	0	1	-	0	0	0	0	0	-	0	0
83	-	0	0	-	0	0	1	1	2	-	0	0
84	-	1	1	-	0	0	0	0	0	-	0	0
85	-	1	1	-	0	0	1	0	1	-	1	1
86	-	1	1	-	1	1	1	0	1	-	0	0
87	-	0	0	-	0	0	-	1	1	-	1	1
88	-	0	0	-	1	1	-	0	0	-	2	2
89	-	1	1	-	0	0	-	1	1	-	0	0
90	-	1	1	-	0	0	-	0	0	-	0	0
91	-	0	0	-	0	0	-	1	1	-	0	0
92	-	1	1	-	1	1	-	1	1	-	0	0
93	-	0	0	-	0	0	-	0	0	-	0	0
94	-	0	0	-	0	0	-	1	1	-	0	0
95	-	0	0	-	0	0	-	0	0	-	0	0
96	-	0	0	-	0	0	-	0	0	-	0	0
97	-	0	0	-	0	0	-	1	1	-	1	1
98	-	0	0	-	0	0	-	0	0	-	0	0
99	-	0	0	-	1	1	-	0	0	-	0	0
100	-	0	0	-	2	2	-	0	0	-	0	0
101	-	0	0	-	0	0	-	0	0	-	0	0
102	-	1	1	-	0	0	-	0	0	-	0	0
103	-	-	-	-	0	0	-	0	0	-	1	1
104	-	-	-	-	0	0	-	0	0	-	-	-
105	-	-	-	-	0	0	-	0	0	-	-	-
106	-	-	-	-	0	0	-	0	0	-	-	-
107	-	-	-	-	0	0	-	0	0	-	-	-
108	-	-	-	-	1	1	-	0	0	-	-	-
109	-	-	-	-	1	1	-	0	0	-	-	-
110	-	-	-	-	0	0	-	0	0	-	-	-
111	-	-	-	-	1	1	-	0	0	-	-	-
112	-	-	-	-	-	-	-	0	0	-	-	-
113	-	-	-	-	-	-	-	0	0	-	-	-
114	-	-	-	-	-	-	-	0	0	-	-	-
115	-	-	-	-	-	-	-	1	1	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	2	8	10	67	82	153	46	55	102	64	61	126

Appendix table 3 (cont'd)

Set no. / Fork length (cm)	7			8			9			13		
	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	1	1	-	-	-
39	-	-	-	-	-	-	-	0	0	-	-	-
40	-	-	-	-	-	-	-	0	0	-	-	-
41	-	-	-	-	-	-	-	0	0	-	-	-
42	-	-	-	-	-	-	-	0	0	-	-	-
43	-	-	-	-	-	-	-	0	0	-	-	-
44	-	-	-	-	-	-	-	0	0	-	-	-
45	-	1	1	2	1	3	-	0	0	-	-	-
46	-	4	4	1	2	3	-	0	0	-	-	-
47	-	2	2	2	2	4	-	0	0	-	-	-
48	-	3	3	0	2	2	-	0	0	-	-	-
49	2	0	2	1	2	3	-	0	0	-	-	-
50	0	2	2	0	1	1	-	0	0	-	-	-
51	1	1	2	1	0	1	-	0	0	-	-	-
52	1	1	2	0	1	1	-	0	0	-	-	-
53	0	2	2	2	0	2	-	0	0	-	-	-
54	1	3	4	1	0	1	-	0	0	-	-	-
55	1	2	3	1	1	2	-	0	0	-	-	-
56	2	5	7	1	1	2	-	0	0	-	-	-
57	3	5	8	3	1	4	-	0	0	-	-	-
58	1	1	2	2	0	2	1	0	1	-	-	-
59	4	0	4	1	0	1	0	0	0	-	-	-
60	1	0	1	1	1	2	1	0	1	1	-	1
61	2	1	3	0	0	0	0	0	0	1	-	1
62	0	1	1	3	0	3	0	0	0	1	-	1
63	2	4	6	2	0	2	0	0	0	2	-	2
64	3	1	4	0	1	1	0	0	0	1	-	1
65	4	2	6	0	3	3	1	0	1	1	-	1
66	4	0	4	0	2	2	1	0	1	0	-	0
67	1	1	2	1	2	3	2	1	3	0	-	0
68	0	1	1	-	1	1	1	0	1	0	-	0
69	1	1	2	-	0	0	0	2	2	2	-	2
70	0	2	2	-	1	1	0	1	1	1	-	1
71	0	2	2	-	0	0	1	1	2	0	1	1
72	1	1	2	-	1	1	0	0	0	0	0	0
73	0	0	0	-	0	0	0	1	1	0	1	1
74	0	1	1	-	0	0	0	0	0	0	1	1
75	0	0	0	-	0	0	0	1	1	0	0	0
76	2	1	3	-	0	0	1	3	4	0	1	1

Appendix table 3 (cont'd)

Set no.	7			8			9			13		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	-	1	1	-	0	0	-	0	0	0	0	0
78	-	0	0	-	0	0	-	0	0	0	1	1
79	-	0	0	-	1	1	-	0	0	2	0	2
80	-	0	0	-	0	0	-	1	1	0	0	0
81	-	1	1	-	0	0	-	0	0	0	0	0
82	-	0	0	-	0	0	-	0	0	1	2	3
83	-	0	0	-	0	0	-	1	1	-	0	0
84	-	0	0	-	0	0	-	0	0	-	0	0
85	-	1	1	-	0	0	-	0	0	-	1	1
86	-	0	0	-	0	0	-	0	0	-	2	2
87	-	0	0	-	0	0	-	1	1	-	2	2
88	-	0	0	-	0	0	-	0	0	-	0	0
89	-	0	0	-	0	0	-	1	1	-	5	5
90	-	0	0	-	0	0	-	0	0	-	0	0
91	-	0	0	-	0	0	-	0	0	-	0	0
92	-	0	0	-	0	0	-	0	0	-	1	1
93	-	0	0	-	0	0	-	0	0	-	0	0
94	-	0	0	-	0	0	-	0	0	-	0	0
95	-	0	0	-	0	0	-	0	0	-	0	0
96	-	0	0	-	0	0	-	1	1	-	0	0
97	-	0	0	-	0	0	-	1	1	-	2	2
98	-	0	0	-	0	0	-	0	0	-	0	0
99	-	0	0	-	0	0	-	0	0	-	0	0
100	-	0	0	-	0	0	-	0	0	-	0	0
101	-	0	0	-	0	0	-	0	0	-	0	0
102	-	0	0	-	0	0	-	0	0	-	1	1
103	-	1	1	-	1	1	-	1	1	-	-	-
104	-	-	-	-	-	-	-	-	-	-	-	-
105	-	-	-	-	-	-	-	-	-	-	-	-
106	-	-	-	-	-	-	-	-	-	-	-	-
107	-	-	-	-	-	-	-	-	-	-	-	-
108	-	-	-	-	-	-	-	-	-	-	-	-
109	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	37	55	92	25	28	53	9	18	27	13	21	34

Appendix table 3 (cont'd)

Set no.	14			15			16			17		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	1	-	1	-	-	-
47	-	-	-	-	-	-	3	2	5	-	-	-
48	-	-	-	-	-	-	1	0	1	-	-	-
49	-	-	-	-	-	-	1	5	6	-	-	-
50	-	-	-	-	-	-	2	3	5	-	-	-
51	-	-	-	-	-	-	3	5	8	-	-	-
52	-	-	-	-	-	-	5	3	8	-	-	-
53	-	-	-	-	-	-	2	5	7	-	-	-
54	-	-	-	-	-	-	4	4	8	-	-	-
55	-	-	-	-	-	-	4	4	8	-	-	-
56	-	-	-	-	-	-	4	3	7	-	-	-
57	-	-	-	-	-	-	4	1	5	1	-	1
58	-	-	-	1	-	1	2	1	3	0	-	0
59	-	-	-	0	-	0	1	5	6	0	-	0
60	1	-	1	0	-	0	2	5	7	0	-	0
61	0	-	0	0	-	0	8	2	10	1	-	1
62	1	-	1	2	-	2	2	3	5	0	-	0
63	0	-	0	2	-	2	13	2	15	0	-	0
64	0	-	0	0	-	0	7	3	10	1	-	1
65	1	-	1	6	-	6	6	2	8	0	-	0
66	1	-	1	2	-	2	6	1	7	1	-	1
67	2	-	2	4	1	5	6	2	8	-	1	1
68	0	-	0	4	0	4	7	2	9	-	0	0
69	2	-	2	6	0	6	3	1	4	-	0	0
70	0	-	0	2	0	2	2	0	2	-	0	0
71	1	-	1	6	3	9	1	1	2	-	0	0
72	1	-	1	10	3	13	1	2	3	-	0	0
73	0	-	0	2	2	4	0	1	1	-	1	1
74	0	1	1	0	0	0	0	0	0	-	0	0
75	0	1	1	4	2	6	2	0	2	-	0	0
76	0	1	1	1	2	3	1	1	2	-	0	0

Appendix table 3 (cont'd)

Set no.	14			15			16			17		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	0	1	1	1	3	4	0	0	0	-	1	1
78	0	1	1	3	1	4	0	0	0	-	-	-
79	0	1	1	-	0	0	0	1	1	-	-	-
80	0	0	0	-	1	1	0	0	0	-	-	-
81	0	0	0	-	0	0	0	0	0	-	-	-
82	0	2	2	-	0	0	1	0	1	-	-	-
83	0	1	1	-	1	1	0	0	0	-	-	-
84	0	1	1	-	2	2	1	0	1	-	-	-
85	0	2	2	-	4	4	-	0	0	-	-	-
86	1	0	1	-	2	2	-	0	0	-	-	-
87	-	3	3	-	0	0	-	0	0	-	-	-
88	-	0	0	-	2	2	-	0	0	-	-	-
89	-	1	1	-	1	1	-	1	1	-	-	-
90	-	2	2	-	3	3	-	2	2	-	-	-
91	-	2	2	-	1	1	-	0	0	-	-	-
92	-	0	0	-	0	0	-	0	0	-	-	-
93	-	0	0	-	0	0	-	0	0	-	-	-
94	-	0	0	-	0	0	-	0	0	-	-	-
95	-	0	0	-	0	0	-	0	0	-	-	-
96	-	0	0	-	0	0	-	0	0	-	-	-
97	-	1	1	-	0	0	-	0	0	-	-	-
98	-	0	0	-	0	0	-	0	0	-	-	-
99	-	0	0	-	1	1	-	0	0	-	-	-
100	-	0	0	-	0	0	-	0	0	-	-	-
101	-	0	0	-	0	0	-	1	1	-	-	-
102	-	0	0	-	0	0	-	0	0	-	-	-
103	-	0	0	-	0	0	-	1	1	-	-	-
104	-	0	0	-	0	0	-	0	0	-	-	-
105	-	0	0	-	1	1	-	0	0	-	-	-
106	-	0	0	-	-	-	-	0	0	-	-	-
107	-	1	1	-	-	-	-	1	1	-	-	-
108	-	0	0	-	-	-	-	-	-	-	-	-
109	-	0	0	-	-	-	-	-	-	-	-	-
110	-	0	0	-	-	-	-	-	-	-	-	-
111	-	1	1	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	11	23	34	56	36	92	106	76	182	4	3	7

Appendix table 3 (cont'd)

Set no.	18			19			20			21		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	1	1	2	-	-	-	-	-	-
53	-	-	-	0	0	0	-	-	-	-	-	-
54	-	-	-	0	0	0	-	-	-	-	-	-
55	-	-	-	0	0	0	-	-	-	1	-	1
56	-	-	-	0	0	0	-	-	-	0	-	0
57	-	-	-	0	0	0	-	2	2	0	-	0
58	-	1	1	1	0	1	-	1	1	2	-	2
59	-	0	0	2	1	3	1	0	1	1	2	3
60	-	0	0	1	0	1	0	0	0	1	1	2
61	1	0	1	1	0	1	0	0	0	2	2	4
62	0	0	0	0	0	0	1	0	1	2	2	4
63	0	0	0	2	0	2	0	0	0	4	0	4
64	0	0	0	0	0	0	1	0	1	6	1	7
65	0	1	1	1	0	1	1	0	1	1	2	3
66	2	0	2	1	0	1	1	0	1	4	1	5
67	0	0	0	0	1	1	1	2	3	5	4	9
68	0	0	0	4	0	4	3	0	3	1	3	4
69	0	0	0	2	2	4	2	1	3	4	3	7
70	0	0	0	1	0	1	2	2	4	1	3	4
71	0	0	0	1	1	2	5	2	7	1	2	3
72	3	1	4	0	1	1	2	1	3	0	2	2
73	1	0	1	0	0	0	1	1	2	1	4	5
74	0	0	0	0	0	0	4	0	4	0	3	3
75	1	0	1	0	2	2	4	4	8	1	2	3
76	0	0	0	0	0	0	3	1	4	0	1	1

Appendix table 3 (cont'd)

Set no.	18			19			20			21		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	1	0	1	0	0	0	5	0	5	0	1	1
78	2	0	2	0	0	0	2	1	3	1	1	2
79	0	0	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	1	1	0	0	0
81	0	0	0	2	0	2	1	1	2	0	1	1
82	0	1	1	-	0	0	-	0	0	0	1	1
83	0	0	0	-	0	0	-	2	2	1	1	2
84	0	0	0	-	0	0	-	3	3	0	0	0
85	1	1	2	-	0	0	-	1	1	0	0	0
86	-	1	1	-	0	0	-	1	1	1	1	2
87	-	2	2	-	0	0	-	1	1	-	1	1
88	-	0	0	-	0	0	-	0	0	-	2	2
89	-	3	3	-	0	0	-	1	1	-	2	2
90	-	0	0	-	1	1	-	0	0	-	1	1
91	-	0	0	-	2	2	-	0	0	-	1	1
92	-	0	0	-	0	0	-	0	0	-	0	0
93	-	1	1	-	0	0	-	0	0	-	0	0
94	-	-	-	-	0	0	-	0	0	-	0	0
95	-	-	-	-	0	0	-	0	0	-	1	1
96	-	-	-	-	0	0	-	1	1	-	0	0
97	-	-	-	-	0	0	-	0	0	-	0	0
98	-	-	-	-	0	0	-	0	0	-	1	1
99	-	-	-	-	0	0	-	1	1	-	-	-
100	-	-	-	-	0	0	-	-	-	-	-	-
101	-	-	-	-	0	0	-	-	-	-	-	-
102	-	-	-	-	0	0	-	-	-	-	-	-
103	-	-	-	-	0	0	-	-	-	-	-	-
104	-	-	-	-	0	0	-	-	-	-	-	-
105	-	-	-	-	0	0	-	-	-	-	-	-
106	-	-	-	-	1	1	-	-	-	-	-	-
107	-	-	-	-	0	0	-	-	-	-	-	-
108	-	-	-	-	0	0	-	-	-	-	-	-
109	-	-	-	-	1	1	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	12	12	24	20	14	34	40	31	71	41	53	94

Appendix table 3 (cont'd)

Set no.	22			23			24			25		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	1	1	2	-	-	-	-	-	-	-	-	-
54	0	1	1	1	-	1	-	-	-	-	-	-
55	0	0	0	1	-	1	-	-	-	-	-	-
56	1	0	1	0	1	1	1	-	1	-	-	-
57	1	2	3	0	0	0	1	-	1	-	-	-
58	3	0	3	0	0	0	0	-	0	-	-	-
59	5	1	6	1	0	1	1	-	1	-	-	-
60	2	0	2	2	2	4	3	2	5	-	-	-
61	0	2	2	1	0	1	0	1	1	-	-	-
62	5	1	6	2	0	2	1	1	2	-	-	-
63	3	3	6	3	2	5	1	0	1	1	-	1
64	2	5	7	1	1	2	2	0	2	0	-	0
65	3	4	7	4	1	5	6	1	7	0	-	0
66	3	4	7	3	4	7	2	3	5	0	-	0
67	2	4	6	3	4	7	5	1	6	2	-	2
68	2	4	6	2	1	3	3	2	5	0	-	0
69	1	2	3	3	5	8	6	3	9	2	-	2
70	2	3	5	0	1	1	2	4	6	1	-	1
71	0	3	3	0	2	2	3	6	9	0	-	0
72	1	2	3	0	2	2	3	2	5	0	-	0
73	1	2	3	1	1	2	2	4	6	2	-	2
74	0	0	0	1	0	1	1	6	8	1	-	1
75	0	2	2	1	1	2	5	4	9	0	-	0
76	0	0	0	0	0	0	2	6	8	0	-	0

Appendix table 3 (cont'd)

Set no. Fork length (cm)	22			23			24			25		
	M	F	T	M	F	T	M	F	T	M	F	T
77	0	0	0	0	1	1	1	6	7	0	-	0
78	0	2	2	1	0	1	4	2	6	0	-	0
79	0	0	0	1	1	2	3	1	4	0	-	0
80	0	1	1	-	1	1	1	0	1	0	1	1
81	0	0	0	-	-	-	0	1	1	0	0	0
82	1	0	1	-	-	-	1	1	2	0	0	0
83	0	1	1	-	-	-	0	2	2	1	0	1
84	0	1	1	-	-	-	0	2	2	-	0	0
85	0	0	0	-	-	-	0	2	2	-	1	1
86	0	0	0	-	-	-	1	1	2	-	0	0
87	0	1	1	-	-	-	-	1	1	-	1	1
88	1	1	2	-	-	-	-	1	1	-	2	2
89	-	2	2	-	-	-	-	0	0	-	0	0
90	-	0	0	-	-	-	-	1	1	-	0	0
91	-	0	0	-	-	-	-	0	0	-	0	0
92	-	0	0	-	-	-	-	1	1	-	0	0
93	-	0	0	-	-	-	-	0	0	-	1	1
94	-	0	0	-	-	-	-	0	0	-	0	0
95	-	0	0	-	-	-	-	0	0	-	0	0
96	-	0	0	-	-	-	-	0	0	-	0	0
97	-	0	0	-	-	-	-	1	1	-	0	0
98	-	0	0	-	-	-	-	0	0	-	0	0
99	-	0	0	-	-	-	-	0	0	-	1	1
100	-	0	0	-	-	-	-	0	0	-	1	1
101	-	1	1	-	-	-	-	0	0	-	-	-
102	-	0	0	-	-	-	-	1	1	-	-	-
103	-	0	0	-	-	-	-	-	-	-	-	-
104	-	0	0	-	-	-	-	-	-	-	-	-
105	-	0	0	-	-	-	-	-	-	-	-	-
106	-	0	0	-	-	-	-	-	-	-	-	-
107	-	0	0	-	-	-	-	-	-	-	-	-
108	-	0	0	-	-	-	-	-	-	-	-	-
109	-	0	0	-	-	-	-	-	-	-	-	-
110	-	0	0	-	-	-	-	-	-	-	-	-
111	-	1	1	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	40	57	97	32	31	63	61	70	132	10	8	18

Appendix table 3 (cont'd)

Set no.	26			27			28			29		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	1	-	1	-	-	-	-	-	-	-	-	-
54	0	-	0	1	-	1	-	-	-	-	-	-
55	0	-	0	1	-	1	-	-	-	1	-	1
56	0	-	0	0	-	0	-	-	-	0	-	0
57	0	-	0	0	1	1	1	-	1	0	1	1
58	1	-	1	3	0	3	1	-	1	1	0	1
59	0	-	0	0	0	0	1	-	1	0	1	1
60	0	-	0	1	0	1	0	-	0	3	1	4
61	0	-	0	1	0	1	4	-	4	2	0	2
62	1	2	3	2	0	2	0	1	1	6	1	7
63	1	1	2	5	1	6	1	1	2	2	5	7
64	4	0	4	7	3	10	3	1	4	4	2	6
65	5	4	9	9	2	11	5	0	5	12	5	17
66	4	1	5	4	7	11	2	1	3	8	1	9
67	2	3	5	2	5	7	4	4	8	7	4	11
68	5	0	5	3	4	7	2	2	4	6	6	12
69	2	1	3	4	11	15	7	1	8	8	4	12
70	2	1	3	5	7	12	3	2	5	10	13	23
71	2	1	3	3	4	7	6	3	9	5	7	12
72	4	5	9	5	2	7	5	7	12	11	6	17
73	3	1	4	3	3	6	4	2	6	3	7	10
74	4	4	8	8	5	13	3	4	7	2	3	5
75	3	2	5	1	5	6	4	1	5	6	8	14
76	5	1	6	3	5	8	1	2	3	6	3	9

Appendix table 3 (cont'd)

Set no.	26			27			28			29		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	3	2	5	7	5	12	1	3	4	1	3	4
78	3	1	4	2	4	6	1	2	3	5	4	9
79	4	2	6	3	1	4	4	5	9	5	3	8
80	3	0	3	9	2	11	2	2	4	2	2	4
81	2	2	4	1	2	3	1	2	3	5	0	5
82	5	2	7	3	3	6	-	2	2	0	3	3
83	-	2	2	2	4	6	-	3	3	0	4	4
84	-	3	3	1	2	3	-	1	1	1	3	4
85	-	3	3	2	5	7	-	1	1	1	1	2
86	-	5	5	1	5	6	-	2	2	1	3	4
87	-	1	1	-	4	4	-	5	5	2	3	5
88	-	2	2	-	2	2	-	3	3	1	1	2
89	-	0	0	-	2	2	-	1	1	-	0	0
90	-	1	1	-	3	3	-	1	1	-	2	2
91	-	1	1	-	1	1	-	2	2	-	0	0
92	-	1	1	-	0	0	-	1	1	-	1	1
93	-	0	0	-	2	2	-	0	0	-	0	0
94	-	2	2	-	0	0	-	0	0	-	0	0
95	-	0	0	-	1	1	-	0	0	-	1	1
96	-	0	0	-	0	0	-	0	0	-	0	0
97	-	1	1	-	2	2	-	0	0	-	1	1
98	-	0	0	-	0	0	-	0	0	-	0	0
99	-	0	0	-	0	0	-	0	0	-	1	1
100	-	0	0	-	0	0	-	0	0	-	-	-
101	-	0	0	-	0	0	-	0	0	-	-	-
102	-	0	0	-	1	1	-	0	0	-	-	-
103	-	0	0	-	0	0	-	0	0	-	-	-
104	-	0	0	-	0	0	-	0	0	-	-	-
105	-	1	1	-	0	0	-	1	1	-	-	-
106	-	-	-	-	0	0	-	-	-	-	-	-
107	-	-	-	-	1	1	-	-	-	-	-	-
108	-	-	-	-	0	0	-	-	-	-	-	-
109	-	-	-	-	1	1	-	-	-	-	-	-
110	-	-	-	-	0	0	-	-	-	-	-	-
111	-	-	-	-	0	0	-	-	-	-	-	-
112	-	-	-	-	0	0	-	-	-	-	-	-
113	-	-	-	-	1	1	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	69	59	128	102	119	221	66	69	135	127	114	241

Appendix table 3 (cont'd)

Set no.	30			31			32			33		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	1	-	1	-	-	-
56	-	-	-	-	-	-	0	-	0	-	-	-
57	-	-	-	-	-	-	0	-	0	1	-	1
58	2	-	2	-	-	-	0	-	0	1	-	1
59	1	-	1	-	-	-	0	-	0	0	-	0
60	1	-	1	-	-	-	0	-	0	0	-	0
61	3	-	3	-	-	-	0	-	0	0	-	0
62	1	1	2	-	-	-	0	-	0	0	-	0
63	1	0	1	1	-	1	0	-	0	1	1	2
64	2	3	5	1	-	1	2	-	2	0	0	0
65	7	1	8	1	-	1	4	1	5	3	2	5
66	3	2	5	2	-	2	1	2	3	3	1	4
67	7	1	8	1	1	2	5	1	6	5	0	5
68	5	1	6	0	1	1	3	1	4	3	2	5
69	6	1	7	1	0	1	5	3	8	3	1	4
70	5	5	10	0	3	3	3	1	4	3	5	8
71	3	5	8	0	2	2	7	0	7	2	1	3
72	4	7	11	3	1	4	5	1	6	2	5	7
73	9	0	9	3	2	5	1	1	2	4	3	7
74	6	5	11	1	2	3	4	0	4	7	3	10
75	4	2	6	4	0	4	3	4	7	8	1	9
76	9	6	15	4	3	7	2	1	3	3	4	7

Appendix table 3 (cont'd)

Set no. Fork length (cm)	30			31			32			33		
	M	F	T	M	F	T	M	F	T	M	F	T
77	8	6	14	2	3	5	2	1	3	5	3	8
78	9	7	16	2	3	5	5	3	8	4	4	8
79	8	2	10	0	1	1	2	3	5	2	4	6
80	1	0	1	2	1	3	1	1	2	3	1	4
81	2	2	4	0	4	4	1	2	3	0	6	6
82	2	4	6	0	1	1	2	2	4	1	6	7
83	1	3	4	3	3	6	1	7	8	0	3	3
84	0	5	5	0	4	4	1	4	5	0	3	3
85	0	4	4	1	2	3	-	3	3	0	8	8
86	1	8	9	1	6	7	-	4	4	1	3	4
87	0	8	8	1	2	3	-	3	3	-	4	4
88	1	8	9	-	4	4	-	5	5	-	3	3
89	-	1	1	-	1	1	-	2	2	-	3	3
90	-	3	3	-	1	1	-	0	0	-	5	5
91	-	4	4	-	1	1	-	1	1	-	1	1
92	-	0	0	-	1	1	-	2	2	-	2	2
93	-	5	5	-	1	1	-	0	0	-	1	1
94	-	2	2	-	2	2	-	1	1	-	2	2
95	-	0	0	-	0	0	-	0	0	-	3	3
96	-	1	1	-	0	0	-	1	1	-	2	2
97	-	3	3	-	1	1	-	-	-	-	0	0
98	-	1	1	-	-	-	-	-	-	-	1	1
99	-	1	1	-	-	-	-	-	-	-	0	0
100	-	1	1	-	-	-	-	-	-	-	0	0
101	-	1	1	-	-	-	-	-	-	-	0	0
102	-	-	-	-	-	-	-	-	-	-	0	0
103	-	-	-	-	-	-	-	-	-	-	1	1
104	-	-	-	-	-	-	-	-	-	-	1	1
105	-	-	-	-	-	-	-	-	-	-	0	0
106	-	-	-	-	-	-	-	-	-	-	1	1
107	-	-	-	-	-	-	-	-	-	-	-	-
108	-	-	-	-	-	-	-	-	-	-	-	-
109	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	112	120	232	34	57	91	61	61	122	65	100	165

Appendix table 3 (cont'd)

Set no.	34			35			36			37		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	1	-	1
56	1	-	1	-	-	-	-	-	-	0	-	0
57	0	-	0	1	-	1	-	-	-	0	-	0
58	0	1	1	0	-	0	-	-	-	0	-	0
59	1	1	2	0	-	0	-	-	-	0	-	0
60	1	0	1	0	-	0	-	-	-	0	1	1
61	0	1	1	1	-	1	-	-	-	0	0	0
62	1	0	1	0	-	0	-	-	-	0	0	0
63	1	1	2	0	-	0	-	1	1	0	0	0
64	3	0	3	1	1	2	-	0	0	0	0	0
65	1	1	2	2	1	3	-	0	0	1	0	1
66	1	1	2	3	1	4	2	1	3	2	1	3
67	2	4	6	0	2	2	2	0	2	3	1	4
68	1	3	4	2	3	5	2	0	2	4	1	5
69	0	2	2	1	0	1	2	0	2	5	1	6
70	0	3	3	5	0	5	3	1	4	2	1	3
71	2	1	3	4	1	5	4	3	7	1	5	6
72	1	0	1	3	1	4	7	3	10	5	1	6
73	0	1	1	3	1	4	1	1	2	3	3	6
74	0	0	0	1	4	5	2	0	2	3	1	4
75	0	0	0	6	1	7	3	4	7	0	5	5
76	1	1	2	3	3	6	4	4	8	2	2	4

Appendix table 3 (cont'd)

Set no. Fork length (cm)	34			35			36			37		
	M	F	T	M	F	T	M	F	T	M	F	T
77	0	1	1	3	2	5	3	6	9	5	6	11
78	0	0	0	1	4	5	2	5	7	2	3	5
79	0	2	2	2	1	3	4	3	7	2	5	7
80	0	0	0	2	1	3	0	5	5	1	1	2
81	0	3	3	0	4	4	2	3	5	3	3	6
82	2	1	3	1	2	3	0	3	3	1	5	6
83	1	5	6	0	3	3	1	6	7	1	4	5
84	0	0	0	1	1	2	1	10	11	1	3	4
85	0	4	4	3	3	6	0	7	7	0	6	6
86	0	2	2	1	1	2	1	2	3	1	6	7
87	0	3	3	0	2	2	-	5	5	0	9	9
88	0	2	2	1	4	5	-	2	2	2	6	8
89	0	2	2	-	3	3	-	1	1	0	3	3
90	0	1	1	-	1	1	-	1	1	0	5	5
91	0	0	0	-	0	0	-	0	0	0	7	7
92	0	0	0	-	1	1	-	3	3	1	2	3
93	0	1	1	-	0	0	-	1	1	-	0	0
94	0	3	3	-	2	2	-	4	4	-	0	0
95	0	0	0	-	0	0	-	0	0	-	0	0
96	0	0	0	-	2	2	-	3	3	-	0	0
97	1	0	1	-	0	0	-	1	1	-	0	0
98	-	0	0	-	0	0	-	2	2	-	0	0
99	-	0	0	-	0	0	-	0	0	-	1	1
100	-	1	1	-	1	1	-	0	0	-	0	0
101	-	0	0	-	2	2	-	1	1	-	1	1
102	-	0	0	-	0	0	-	-	-	-	0	0
103	-	0	0	-	1	1	-	-	-	-	3	3
104	-	0	0	-	-	-	-	-	-	-	-	-
105	-	0	0	-	-	-	-	-	-	-	-	-
106	-	0	0	-	-	-	-	-	-	-	-	-
107	-	0	0	-	-	-	-	-	-	-	-	-
108	-	1	1	-	-	-	-	-	-	-	-	-
109	-	0	0	-	-	-	-	-	-	-	-	-
110	-	1	1	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	21	54	75	51	60	111	46	92	138	52	102	154

Appendix table 3 (cont'd)

Set no.	38			39			40			41		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	1	-	1	-	-	-	-	-	-
56	-	-	-	0	-	0	-	-	-	-	-	-
57	-	-	-	0	-	0	-	-	-	-	-	-
58	-	-	-	0	-	0	-	-	-	-	-	-
59	-	-	-	0	-	0	-	-	-	-	-	-
60	-	-	-	2	-	2	-	-	-	-	-	-
61	-	-	-	1	-	1	1	-	1	-	-	-
62	1	-	1	3	-	3	0	-	0	-	-	-
63	1	-	1	0	-	0	0	-	0	-	-	-
64	1	-	1	2	1	3	0	-	0	-	2	2
65	0	-	0	2	1	3	2	-	2	-	0	0
66	1	-	1	6	1	7	0	-	0	1	1	2
67	0	-	0	2	0	2	2	2	4	3	1	4
68	0	2	2	3	2	5	0	0	0	1	2	3
69	2	2	4	2	2	4	3	0	3	5	1	6
70	5	2	7	3	1	4	3	0	3	3	2	5
71	1	2	3	5	3	8	2	0	2	8	2	10
72	2	3	5	7	4	11	0	1	1	2	1	3
73	2	2	4	5	2	7	2	0	2	1	5	6
74	0	2	2	1	2	3	1	1	2	3	1	4
75	1	1	2	4	3	7	3	0	3	8	8	16
76	2	3	5	3	0	3	1	3	4	3	6	9

Appendix table 3 (cont'd)

Set no.	38			39			40			41		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	3	3	6	1	3	4	1	1	2	7	4	11
78	2	2	4	1	1	2	2	1	3	9	2	11
79	4	1	5	0	5	5	0	1	1	3	2	5
80	2	3	5	2	2	4	1	3	4	5	5	10
81	1	1	2	2	1	3	1	2	3	3	5	8
82	1	3	4	0	2	2	1	1	2	6	4	10
83	0	2	2	1	3	4	0	3	3	1	8	9
84	0	5	5	0	3	3	0	3	3	1	14	15
85	0	4	4	1	4	5	0	6	6	1	9	10
86	0	4	4	0	1	1	0	4	4	1	11	12
87	0	3	3	0	6	6	1	5	6	-	15	15
88	1	3	4	0	3	3	-	3	3	-	17	17
89	0	3	3	1	0	1	-	1	1	-	7	7
90	0	1	1	-	1	1	-	6	6	-	10	10
91	1	1	2	-	2	2	-	3	3	-	7	7
92	-	1	1	-	0	0	-	1	1	-	4	4
93	-	0	0	-	1	1	-	1	1	-	2	2
94	-	1	1	-	1	1	-	1	1	-	1	1
95	-	0	0	-	0	0	-	2	2	-	1	1
96	-	1	1	-	0	0	-	2	2	-	2	2
97	-	0	0	-	1	1	-	1	1	-	0	0
98	-	0	0	-	1	1	-	0	0	-	1	1
99	-	0	0	-	0	0	-	0	0	-	1	1
100	-	0	0	-	1	1	-	0	0	-	2	2
101	-	0	0	-	1	1	-	0	0	-	1	1
102	-	1	1	-	0	0	-	1	1	-	0	0
103	-	0	0	-	0	0	-	0	0	-	0	0
104	-	0	0	-	0	0	-	2	2	-	1	1
105	-	0	0	-	0	0	-	1	1	-	0	0
106	-	0	0	-	1	1	-	1	1	-	0	0
107	-	0	0	-	-	-	-	-	-	-	1	1
108	-	0	0	-	-	-	-	-	-	-	-	-
109	-	0	0	-	-	-	-	-	-	-	-	-
110	-	0	0	-	-	-	-	-	-	-	-	-
111	-	1	1	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	34	63	97	61	66	127	27	63	90	75	169	244

Appendix table 3 (cont'd)

Set no.	42			43			44			45		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	1	-	1	-	-	-	-	-	-
58	-	-	-	0	-	0	-	-	-	-	-	-
59	-	-	-	0	-	0	-	-	-	-	-	-
60	-	-	-	0	1	1	-	-	-	-	-	-
61	-	-	-	1	0	1	-	-	-	-	-	-
62	-	-	-	0	0	0	2	-	2	-	-	-
63	-	-	-	0	0	0	1	-	1	1	-	1
64	-	1	1	2	0	2	0	-	0	1	-	1
65	2	0	2	1	4	5	2	1	3	2	1	3
66	3	1	4	1	2	3	5	0	5	2	1	3
67	3	0	3	0	3	3	0	0	0	3	4	7
68	6	0	6	3	2	5	2	0	2	6	4	10
69	2	4	6	2	2	4	3	2	5	4	2	6
70	4	2	6	3	1	4	11	2	13	4	5	9
71	3	3	6	3	3	6	3	0	3	2	2	4
72	5	4	9	2	0	2	6	3	9	7	1	8
73	0	7	7	3	1	4	5	2	7	7	2	9
74	4	4	8	1	1	2	9	2	11	8	3	11
75	3	2	5	1	3	4	4	6	10	5	3	8
76	4	5	9	1	2	3	10	6	16	6	6	12

Appendix table 3 (cont'd)

Set no.	42			43			44			45		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	1	2	3	2	6	8	4	3	8	4	6	10
78	4	3	7	1	2	3	7	6	13	3	3	6
79	1	6	7	1	6	7	8	4	12	6	1	7
80	0	3	3	3	1	4	1	6	7	4	8	12
81	1	3	4	0	4	4	3	2	5	1	1	2
82	2	2	4	1	4	5	0	1	1	-	1	1
83	1	7	8	1	2	3	0	5	5	-	3	3
84	1	9	10	0	2	2	1	5	6	-	5	5
85	0	5	5	1	5	6	0	5	5	-	1	1
86	2	8	10	1	4	5	0	7	7	-	1	1
87	1	6	7	0	4	4	0	3	3	-	6	6
88	1	5	6	1	1	2	1	7	8	-	3	3
89	-	6	7	-	2	2	-	4	4	-	3	3
90	-	5	5	-	3	3	-	3	3	-	1	1
91	-	1	1	-	0	0	-	1	1	-	1	1
92	-	0	0	-	4	4	-	2	2	-	1	1
93	-	0	0	-	1	1	-	0	0	-	1	1
94	-	1	1	-	0	0	-	1	1	-	0	0
95	-	2	2	-	0	0	-	0	0	-	1	1
96	-	0	0	-	0	0	-	3	3	-	1	1
97	-	2	2	-	0	0	-	2	2	-	0	0
98	-	3	3	-	0	0	-	2	2	-	0	0
99	-	1	1	-	0	0	-	1	1	-	0	0
100	-	0	0	-	0	0	-	0	0	-	0	0
101	-	0	0	-	0	0	-	0	0	-	0	0
102	-	2	2	-	1	1	-	0	0	-	0	0
103	-	0	0	-	-	-	-	0	0	-	0	0
104	-	0	0	-	-	-	-	0	0	-	0	0
105	-	0	0	-	-	-	-	1	1	-	2	2
106	-	0	0	-	-	-	-	0	0	-	0	0
107	-	0	0	-	-	-	-	1	1	-	1	1
108	-	0	0	-	-	-	-	-	-	-	-	-
109	-	0	0	-	-	-	-	-	-	-	-	-
110	-	0	0	-	-	-	-	-	-	-	-	-
111	-	0	0	-	-	-	-	-	-	-	-	-
112	-	1	1	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	54	116	171	37	77	114	88	99	188	76	85	161

Appendix table 3 (cont'd)

Set no.	46			47			48			49		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	-	-	-	-	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	1	-	1	-	-	-	-	-	-	-	-	-
59	0	-	0	-	-	-	-	-	-	-	-	-
60	0	-	0	-	-	-	-	-	-	1	-	1
61	0	-	0	-	-	-	-	-	-	0	2	2
62	0	-	0	1	1	2	-	-	-	0	0	0
63	1	1	2	1	1	2	-	-	-	1	0	1
64	2	0	2	2	0	2	-	-	-	0	0	0
65	3	0	3	5	0	5	2	-	2	1	2	3
66	3	1	4	4	0	4	1	1	2	3	5	8
67	0	0	0	6	1	7	1	2	3	2	0	2
68	5	1	6	2	4	6	3	0	3	4	1	5
69	1	2	3	4	2	6	1	1	2	8	3	11
70	1	0	1	5	2	7	2	1	3	3	1	4
71	4	2	6	1	4	5	3	2	5	0	0	0
72	2	1	3	5	4	9	3	1	4	5	2	7
73	2	3	5	6	7	13	0	2	2	5	2	7
74	2	1	3	3	5	8	10	1	11	7	2	9
75	1	2	3	3	1	4	8	3	11	1	1	2
76	2	3	5	2	3	5	5	2	7	4	1	5

Appendix table 3 (cont'd)

Set no. Fork length (cm)	46			47			48			49		
	M	F	T	M	F	T	M	F	T	M	F	T
77	4	3	7	1	2	3	2	3	5	5	3	8
78	1	4	5	2	6	8	3	2	5	3	4	7
79	2	4	6	2	5	7	5	3	8	3	4	7
80	1	3	4	0	4	4	3	0	3	2	2	4
81	1	1	2	0	0	0	0	4	4	2	3	5
82	-	0	0	1	1	2	0	1	1	2	4	6
83	-	0	0	-	6	6	2	3	5	0	2	2
84	-	4	4	-	3	3	2	4	6	0	5	5
85	-	3	3	-	4	4	1	7	8	1	3	4
86	-	2	2	-	3	3	-	7	7	-	7	7
87	-	3	3	-	1	1	-	4	4	-	1	1
88	-	1	1	-	4	4	-	2	2	-	4	4
89	-	2	2	-	3	3	-	2	2	-	1	1
90	-	1	1	-	0	0	-	3	3	-	3	3
91	-	1	1	-	2	2	-	2	2	-	1	1
92	-	0	0	-	1	1	-	1	1	-	2	2
93	-	0	0	-	2	2	-	1	1	-	1	1
94	-	1	1	-	1	1	-	0	0	-	3	3
95	-	0	0	-	0	0	-	0	0	-	2	2
96	-	0	0	-	0	0	-	0	0	-	2	2
97	-	0	0	-	0	0	-	0	0	-	0	0
98	-	1	1	-	0	0	-	2	2	-	1	1
99	-	0	0	-	0	0	-	1	1	-	0	0
100	-	0	0	-	1	1	-	0	0	-	0	0
101	-	1	1	-	0	0	-	3	3	-	1	1
102	-	-	-	-	0	0	-	-	-	-	1	1
103	-	-	-	-	2	2	-	-	-	-	0	0
104	-	-	-	-	-	-	-	-	-	-	0	0
105	-	-	-	-	-	-	-	-	-	-	0	0
106	-	-	-	-	-	-	-	-	-	-	0	0
107	-	-	-	-	-	-	-	-	-	-	0	0
108	-	-	-	-	-	-	-	-	-	-	0	0
109	-	-	-	-	-	-	-	-	-	-	0	0
110	-	-	-	-	-	-	-	-	-	-	0	0
111	-	-	-	-	-	-	-	-	-	-	1	1
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	39	52	91	56	86	142	57	71	128	63	83	146

Appendix table 3 (cont'd)

Set no.	50			51			52			53		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	1	-	1	-	-	-
53	-	-	-	-	-	-	0	-	0	-	-	-
54	-	-	-	-	-	-	0	-	0	-	-	-
55	-	-	-	-	-	-	0	-	0	-	-	-
56	-	-	-	-	-	-	0	-	0	-	-	-
57	-	-	-	-	-	-	2	1	3	-	-	-
58	-	-	-	1	-	1	2	1	3	-	-	-
59	-	-	-	0	-	0	1	0	1	1	-	1
60	-	-	-	0	-	0	0	1	1	1	-	1
61	-	-	-	0	-	0	1	0	1	2	-	2
62	-	-	-	0	-	0	3	3	6	2	-	2
63	1	-	1	0	-	0	6	4	10	1	2	3
64	1	1	2	1	-	1	8	2	10	3	1	4
65	0	0	0	2	-	2	9	2	11	2	2	4
66	2	0	2	0	-	0	6	5	11	1	2	3
67	2	3	5	3	2	5	6	5	11	3	6	9
68	0	3	3	2	1	3	6	5	11	8	10	18
69	1	0	1	3	2	5	5	9	14	5	2	7
70	3	1	4	3	5	8	6	6	12	7	5	12
71	5	0	5	4	8	12	3	4	7	7	5	12
72	5	3	8	5	7	12	6	3	9	4	5	9
73	4	2	6	9	11	20	3	3	7	3	8	11
74	7	1	8	3	5	8	3	4	7	3	5	8
75	2	3	5	6	2	8	4	4	8	2	5	7
76	7	4	11	8	12	21	4	5	9	2	6	8

Appendix table 3 (cont'd)

Set no. Fork length (cm)	50			51			52			53		
	M	F	T	M	F	T	M	F	T	M	F	T
77	2	2	4	7	7	14	3	2	5	3	4	7
78	1	3	4	3	13	16	3	7	10	5	5	10
79	2	1	3	5	6	11	3	10	13	1	3	4
80	1	2	3	2	11	13	3	4	7	1	4	5
81	1	2	3	3	6	9	0	3	3	2	5	7
82	1	1	2	2	4	7	1	3	4	1	7	8
83	1	3	4	2	7	9	0	7	7	0	4	4
84	0	3	3	0	7	7	1	5	6	0	8	8
85	1	7	8	2	6	8	0	7	7	0	10	10
86	-	5	5	-	7	7	1	5	6	1	8	9
87	-	2	2	-	5	5	1	3	4	-	4	4
88	-	2	2	-	9	9	0	10	10	-	7	7
89	-	1	1	-	3	3	0	5	5	-	5	5
90	-	0	0	-	1	1	1	2	3	-	2	2
91	-	1	1	-	3	3	0	2	2	-	7	7
92	-	0	0	-	4	4	0	1	1	-	3	3
93	-	1	1	-	3	3	0	2	2	-	1	1
94	-	1	1	-	1	1	0	0	0	-	1	1
95	-	0	0	-	1	1	0	0	0	-	3	3
96	-	1	1	-	4	4	0	1	1	-	1	1
97	-	0	0	-	1	1	0	2	2	-	0	0
98	-	1	1	-	0	0	0	0	0	-	2	2
99	-	0	0	-	2	2	1	0	1	-	1	1
100	-	2	2	-	3	3	-	0	0	-	1	1
101	-	0	0	-	1	1	-	0	0	-	-	-
102	-	0	0	-	0	0	-	0	0	-	-	-
103	-	1	1	-	0	0	-	0	0	-	-	-
104	-	0	0	-	0	0	-	0	0	-	-	-
105	-	0	0	-	0	0	-	0	0	-	-	-
106	-	0	0	-	1	1	-	1	1	-	-	-
107	-	2	2	-	-	-	-	-	-	-	-	-
108	-	-	-	-	-	-	-	-	-	-	-	-
109	-	-	-	-	-	-	-	-	-	-	-	-
110	-	-	-	-	-	-	-	-	-	-	-	-
111	-	-	-	-	-	-	-	-	-	-	-	-
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	50	65	115	76	171	249	103	149	253	71	160	231

Appendix table 3 (cont'd)

Set no. Fork length (cm)	54			55			56			57		
	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	1	1
54	-	-	-	-	-	-	1	-	1	-	0	0
55	-	-	-	-	-	-	2	-	2	-	0	0
56	1	-	1	-	-	-	1	2	3	1	1	2
57	0	-	0	-	-	-	0	1	1	3	0	3
58	0	-	0	1	-	1	3	1	4	3	0	3
59	0	-	0	0	-	0	3	2	5	0	0	0
60	3	1	4	0	-	0	7	1	8	3	2	5
61	1	1	2	1	1	2	4	1	5	3	2	5
62	4	0	4	0	0	0	9	1	10	5	0	5
63	4	1	5	6	0	6	14	2	16	5	2	7
64	3	3	6	1	0	1	8	1	9	5	2	7
65	8	3	11	5	3	8	8	10	18	5	4	9
66	7	2	9	3	3	6	9	7	16	6	4	10
67	6	2	8	6	2	8	9	6	15	7	2	9
68	4	3	7	4	7	11	7	6	13	3	6	9
69	3	2	5	5	4	9	6	10	16	8	5	13
70	1	3	4	1	4	5	4	4	8	9	7	16
71	6	5	11	5	6	11	6	11	17	7	5	12
72	3	3	6	2	1	3	2	8	10	3	7	10
73	3	5	8	3	3	6	1	1	2	5	7	12
74	4	6	10	4	1	5	3	4	7	3	0	3
75	3	12	15	3	4	7	4	7	11	8	10	18
76	2	10	12	4	5	9	5	4	9	3	5	8

Appendix table 3 (cont'd)

Set no.	54			55			56			57		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
77	5	6	11	1	2	3	2	0	2	4	5	9
78	7	7	14	2	4	6	2	2	4	2	7	9
79	4	6	10	1	5	6	3	2	5	6	7	13
80	0	8	8	1	1	2	3	3	6	4	6	10
81	2	6	8	1	2	3	2	6	8	3	11	14
82	3	4	7	1	2	3	0	5	5	1	4	5
83	0	11	11	0	2	2	0	1	1	5	8	13
84	1	6	7	0	3	3	1	3	4	2	7	9
85	0	12	12	0	5	5	1	0	1	1	4	5
86	0	11	11	0	0	0	-	5	5	0	15	15
87	0	2	2	0	5	5	-	5	5	1	6	7
88	1	6	7	0	6	6	-	2	2	-	13	13
89	-	3	3	0	2	2	-	4	4	-	11	11
90	-	3	3	1	1	2	-	2	2	-	10	10
91	-	1	1	-	1	1	-	1	1	-	8	8
92	-	5	5	-	3	3	-	2	2	-	3	3
93	-	5	5	-	1	1	-	1	1	-	3	3
94	-	1	1	-	1	1	-	1	1	-	1	1
95	-	1	1	-	1	1	-	2	2	-	8	8
96	-	3	3	-	2	2	-	0	0	-	1	1
97	-	0	0	-	-	-	-	0	0	-	2	2
98	-	0	0	-	-	-	-	0	0	-	2	2
99	-	0	0	-	-	-	-	1	1	-	1	1
100	-	2	2	-	-	-	-	0	0	-	3	3
101	-	0	0	-	-	-	-	0	0	-	0	0
102	-	0	0	-	-	-	-	0	0	-	0	0
103	-	1	1	-	-	-	-	0	0	-	1	1
104	-	0	0	-	-	-	-	1	1	-	1	1
105	-	1	1	-	-	-	-	0	0	-	2	2
106	-	-	-	-	-	-	-	0	0	-	0	0
107	-	-	-	-	-	-	-	1	1	-	0	0
108	-	-	-	-	-	-	-	-	-	-	0	0
109	-	-	-	-	-	-	-	-	-	-	0	0
110	-	-	-	-	-	-	-	-	-	-	0	0
111	-	-	-	-	-	-	-	-	-	-	1	1
112	-	-	-	-	-	-	-	-	-	-	-	-
113	-	-	-	-	-	-	-	-	-	-	-	-
114	-	-	-	-	-	-	-	-	-	-	-	-
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	89	173	262	62	93	155	130	140	270	124	223	347

Appendix table 3 (cont'd)

Set no. / Fork length (cm)	58			59			60			61		
	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	1	-	1	-	-	-	-	-	-	1	-	1
47	0	-	0	-	-	-	1	-	1	0	-	0
48	0	-	0	-	1	1	0	-	0	1	-	1
49	0	-	0	-	0	0	0	-	0	0	-	0
50	0	-	0	-	0	0	0	-	0	0	-	0
51	0	-	0	-	0	0	0	-	0	0	-	0
52	0	-	0	-	0	0	0	-	0	0	-	0
53	0	-	0	-	0	0	0	-	0	0	1	1
54	2	1	3	-	1	1	0	1	1	0	0	0
55	4	1	5	-	0	0	1	0	1	0	0	0
56	0	4	4	-	1	1	1	2	3	0	0	0
57	3	0	3	3	0	3	1	0	1	1	0	1
58	2	1	3	2	0	2	4	1	5	2	0	2
59	1	2	3	0	1	1	8	1	9	0	1	1
60	1	2	3	2	0	2	6	3	9	2	0	2
61	3	0	3	0	0	0	9	4	13	3	0	3
62	2	4	6	4	2	6	9	2	11	2	0	2
63	2	2	4	3	2	5	5	2	7	0	0	0
64	6	1	7	7	3	10	14	6	20	3	1	4
65	1	0	1	9	0	9	9	2	11	0	0	0
66	1	2	3	7	3	10	10	3	13	2	0	2
67	1	3	4	2	5	7	4	3	7	2	1	3
68	1	3	4	5	9	14	7	3	10	1	2	3
69	0	1	1	1	3	4	6	6	12	0	0	0
70	3	2	5	2	5	7	1	1	2	0	0	0
71	1	2	3	5	1	6	1	0	1	0	1	1
72	0	0	0	2	1	3	4	4	8	0	0	0
73	1	0	1	2	2	4	1	6	7	1	1	2
74	0	0	0	2	2	4	1	3	4	2	0	2
75	0	1	1	3	1	4	2	1	3	1	0	1
76	1	0	1	2	4	7	6	4	10	1	1	2

Appendix table 3 (cont'd)

Set no. Fork length (cm)	58			59			60			61		
	M	F	T	M	F	T	M	F	T	M	F	T
77	1	0	1	0	2	2	1	5	6	0	0	0
78	-	0	0	1	5	6	4	2	6	1	0	1
79	-	1	1	1	0	1	3	1	4	2	0	2
80	-	0	0	2	1	3	0	7	7	-	1	1
81	-	0	0	-	1	1	0	2	2	-	0	0
82	-	1	1	-	2	2	0	2	2	-	0	0
83	-	0	0	-	0	0	0	4	4	-	0	0
84	-	0	0	-	3	3	0	3	3	-	1	1
85	-	0	0	-	4	4	0	2	2	-	1	1
86	-	0	0	-	4	4	0	4	4	-	1	1
87	-	0	0	-	3	3	0	0	0	-	1	1
88	-	0	0	-	1	1	0	2	2	-	1	1
89	-	0	0	-	0	0	1	1	2	-	-	-
90	-	1	1	-	1	1	1	4	5	-	-	-
91	-	0	0	-	2	2	-	1	1	-	-	-
92	-	0	0	-	1	1	-	0	0	-	-	-
93	-	0	0	-	1	1	-	0	0	-	-	-
94	-	0	0	-	0	0	-	1	1	-	-	-
95	-	0	0	-	0	0	-	0	0	-	-	-
96	-	0	0	-	0	0	-	1	1	-	-	-
97	-	0	0	-	0	0	-	0	0	-	-	-
98	-	0	0	-	0	0	-	0	0	-	-	-
99	-	0	0	-	0	0	-	0	0	-	-	-
100	-	0	0	-	0	0	-	0	0	-	-	-
101	-	1	1	-	0	0	-	1	1	-	-	-
102	-	-	-	-	0	0	-	1	1	-	-	-
103	-	-	-	-	0	0	-	1	1	-	-	-
104	-	-	-	-	0	0	-	-	-	-	-	-
105	-	-	-	-	0	0	-	-	-	-	-	-
106	-	-	-	-	0	0	-	-	-	-	-	-
107	-	-	-	-	0	0	-	-	-	-	-	-
108	-	-	-	-	1	1	-	-	-	-	-	-
109	-	-	-	-	0	0	-	-	-	-	-	-
110	-	-	-	-	0	0	-	-	-	-	-	-
111	-	-	-	-	0	0	-	-	-	-	-	-
112	-	-	-	-	0	0	-	-	-	-	-	-
113	-	-	-	-	0	0	-	-	-	-	-	-
114	-	-	-	-	0	0	-	-	-	-	-	-
115	-	-	-	-	0	0	-	-	-	-	-	-
116	-	-	-	-	1	1	-	-	-	-	-	-
Total	38	36	74	67	80	148	121	103	224	28	15	43

Appendix table 3 (cont'd)

Set no.	62			63			64			65		
Fork length (cm)	M	F	T	M	F	T	M	F	T	M	F	T
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	1	-	1	-	-	-
42	-	-	-	-	-	-	0	-	0	-	-	-
43	-	-	-	-	-	-	0	-	0	-	-	-
44	-	-	-	-	-	-	0	-	0	-	-	-
45	-	-	-	-	-	-	0	-	0	-	-	-
46	-	-	-	-	-	-	0	-	0	-	-	-
47	1	-	1	1	-	1	0	-	0	-	-	-
48	2	-	2	0	-	0	0	-	0	-	-	-
49	0	-	0	0	-	0	0	1	1	-	-	-
50	0	-	0	1	-	1	0	0	0	-	-	-
51	0	-	0	0	1	1	0	0	0	-	-	-
52	1	-	1	0	1	1	0	1	1	-	-	-
53	0	-	0	1	1	2	0	1	1	-	-	-
54	0	-	0	1	1	2	2	0	2	-	-	-
55	0	1	1	0	0	0	0	0	0	1	-	1
56	0	1	1	1	0	1	1	0	1	1	-	1
57	1	0	1	0	1	1	2	0	2	0	-	0
58	0	1	1	1	0	1	1	0	1	1	-	1
59	3	1	4	5	1	6	1	0	1	1	-	1
60	3	0	3	1	1	2	1	1	2	1	-	1
61	3	1	4	3	1	4	2	1	3	1	-	1
62	2	0	2	2	0	2	5	1	6	2	1	3
63	5	1	6	6	2	8	0	0	0	6	0	6
64	4	3	7	0	3	3	1	0	1	2	0	2
65	2	3	5	1	2	3	4	1	5	4	0	4
66	0	4	4	1	7	8	2	1	3	4	0	4
67	2	3	5	4	3	7	3	0	3	1	1	2
68	2	7	9	0	4	4	2	1	3	3	3	6
69	5	6	11	2	5	7	0	1	1	2	1	3
70	2	0	2	2	1	3	1	3	4	4	3	7
71	3	5	8	3	2	5	0	1	1	2	5	7
72	3	2	5	3	1	4	2	1	3	0	3	3
73	4	3	7	1	2	3	2	2	4	3	0	3
74	3	2	5	3	1	4	0	0	0	3	0	3
75	3	5	8	3	1	4	0	0	0	2	1	3
76	2	0	2	3	3	6	5	0	5	3	1	4

Appendix table 3 (cont'd)

Set no. Fork length (cm)	62			63			64			65		
	M	F	T	M	F	T	M	F	T	M	F	T
77	1	1	2	1	1	2	3	0	3	1	4	5
78	2	0	2	0	0	0	1	3	4	2	2	4
79	3	1	4	1	1	2	2	1	3	1	4	5
80	2	0	2	3	1	4	0	2	2	2	1	3
81	1	3	4	2	0	2	1	2	3	1	1	2
82	-	1	1	1	0	1	1	1	2	1	2	3
83	-	1	1	1	1	2	-	0	0	0	3	3
84	-	0	0	0	0	0	-	1	1	0	0	0
85	-	4	4	0	0	0	-	2	2	1	1	2
86	-	3	3	0	1	1	-	4	4	2	2	4
87	-	3	3	0	1	1	-	3	3	1	3	4
88	-	1	1	0	1	1	-	4	4	1	1	2
89	-	3	3	1	0	1	-	2	2	-	2	2
90	-	2	2	-	0	0	-	1	1	-	3	3
91	-	0	0	-	0	0	-	3	3	-	1	1
92	-	0	0	-	0	0	-	0	0	-	2	2
93	-	1	1	-	0	0	-	0	0	-	0	0
94	-	1	1	-	0	0	-	0	0	-	1	1
95	-	1	1	-	1	1	-	0	0	-	0	0
96	-	0	0	-	0	0	-	2	2	-	0	0
97	-	0	0	-	0	0	-	1	1	-	0	0
98	-	2	2	-	0	0	-	0	0	-	2	2
99	-	1	1	-	0	0	-	0	0	-	0	0
100	-	0	0	-	1	1	-	0	0	-	0	0
101	-	0	0	-	-	-	-	0	0	-	1	1
102	-	0	0	-	-	-	-	0	0	-	0	0
103	-	1	1	-	-	-	-	1	1	-	0	0
104	-	-	-	-	-	-	-	-	-	-	1	1
105	-	-	-	-	-	-	-	-	-	-	0	0
106	-	-	-	-	-	-	-	-	-	-	0	0
107	-	-	-	-	-	-	-	-	-	-	0	0
108	-	-	-	-	-	-	-	-	-	-	0	0
109	-	-	-	-	-	-	-	-	-	-	0	0
110	-	-	-	-	-	-	-	-	-	-	0	0
111	-	-	-	-	-	-	-	-	-	-	0	0
112	-	-	-	-	-	-	-	-	-	-	0	0
113	-	-	-	-	-	-	-	-	-	-	0	0
114	-	-	-	-	-	-	-	-	-	-	1	1
115	-	-	-	-	-	-	-	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
Total	65	79	144	59	54	113	46	50	96	60	57	117

Appendix table 3 (cont'd)

Fork length (cm)	Total		
	M	F	T
33	-	-	1
34	-	1	1
35	2	0	2
36	0	0	1
37	0	0	0
38	0	1	1
39	0	0	0
40	0	0	0
41	1	0	1
42	0	0	0
43	0	0	0
44	1	1	2
45	4	4	8
46	5	8	13
47	12	10	23
48	8	11	19
49	8	13	21
50	5	8	13
51	8	13	21
52	18	14	32
53	16	20	36
54	18	18	36
55	27	15	42
56	22	30	52
57	44	24	69
58	56	14	70
59	54	23	78
60	63	32	95
61	71	30	101
62	98	32	130
63	131	54	185
64	137	59	196
65	187	84	271
66	162	101	263
67	169	116	285
68	156	132	288
69	170	132	302
70	154	136	290
71	152	147	299
72	168	135	303
73	132	138	271
74	141	103	245
75	151	142	293
76	154	158	315
77	119	135	255
78	123	147	270
79	116	129	245
80	77	114	191
81	54	114	168
82	49	104	154
83	28	153	181
84	17	161	178
85	20	183	203
86	20	191	211
87	8	167	175
88	12	172	184
89	3	114	118
90	3	105	108
91	1	78	79
92	1	60	61
93	0	42	42
94	0	40	40
95	0	32	32
96	0	38	38
97	1	28	29
98	0	25	25
99	1	17	18
100	-	22	22
101	-	18	18
102	-	11	11
103	-	18	18
104	-	7	7
105	-	10	10
106	-	6	6
107	-	9	9
108	-	3	3
109	-	3	3
110	-	1	1
111	-	4	4
112	-	2	2
113	-	2	2
114	-	1	1
115	-	1	1
116	-	1	1
Total	3358	4427	7798

[a]Total includes unsexed fish.